Vaporware: Imaginary High-Tech Products and Real Antitrust Liability in a Post-Chicago World

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I. INTRODUCTION

In rejecting a consent decree in the antitrust case *United States v. Microsoft Corp.*,[1] Judge Stanley Sporkin noted that "vaporware," the high-technology industry's marketing ploy of preannouncing products that do not exist at the time of the announcement and may never come into existence in anything like their described form,[2] "is a practice that is deceitful on its face and everybody in the business community knows it."[3] In part because of his misgivings about Microsoft Corporation's alleged

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[1] 159 F.R.D. 318 (D.D.C. 1995), *rev'd per curiam*, 56 F.3d 1448 (D.C. Cir. 1995). The original complaint charged Microsoft with violating sections 1 and 2 of the Sherman Act in the market for personal computer operating systems for the x86 class of microprocessors. The complaint attacked three of Microsoft's marketing practices: (a) "per processor" licenses by which Microsoft required original equipment manufacturers (OEMs) to pay a royalty for each computer the OEM sold regardless of whether it contained a Microsoft operating system; (b) "minimum commitments" distribution practices whereby Microsoft induced OEMs to commit to buy a minimum number of units of Microsoft operating systems under circumstances making it economically unattractive to install any non-Microsoft system; and (c) use of non-disclosure agreements (NDAs) to discourage independent software developers (ISVs) from developing applications for competing operating systems. The complaint did not mention vaporware marketing practices. 159 F.R.D. at 322–24.

[2] *See* ROBIN WILLIAMS, JARGON: AN INFORMAL DICTIONARY OF COMPUTER TERMS 576 (1993) ("*Vaporware* is a product that the vendor keeps promising is about to arrive any moment (*real soon now*)—but it goes so long past its shipment date that no one really believes it will ever really ship. Sometimes it never does."); *see also* David Churbuck, *Vapordisk*, FORBES, Oct. 28, 1991, at 188 (quoting computer industry pundit Stewart Alsop who defines vaporware as "computer products that exist chiefly in the minds of the people who announce them"); Deborah Russell, *Geffen Tests Cyber Waters on New Frontline Sports Vid*, BILLBOARD, Apr. 30, 1994, at 50 (vaporware "means *bull* in computerland"); Harry Sommerfield, *Technically Speaking: A Guide to the Brave New World of Electronic Gadgets*, S.F. CHRON., Jan. 13, 1993, at Z1 (vaporware is "a product that is perpetually promised for tomorrow").

[3] *Microsoft*, 159 F.R.D. at 337.

use of the vaporware marketing technique,[4] which was not addressed in the consent decree presented to the court for approval in the *Microsoft* case, Judge Sporkin refused to approve the consent decree.[5]

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[4] In criticizing the remedies provided by the consent decree, Judge Sporkin also noted:

> The Court has been particularly concerned about the accusations of "vaporware." Microsoft has a dominant position in the operating systems market, from which the Government's expert concedes it would be very hard to dislodge it. Given this fact, Microsoft could unfairly hold onto this position with aggressive preannouncements of new products in the face of the introduction of possibly superior competitive products. In other words, all participants concede, that consumers and OEMs will be reluctant to shift to a new operating system, even a superior one, because it will mean not only giving up on both its old operating systems and applications, but also risking the possibility that there will not be adequate applications to run on the superior product. If this is true, Microsoft can hold onto its market share gained allegedly illegally, even with the introduction of a competitor's operating system superior to its own. By telling the public, "we have developed a product that we are just about to introduce into the market (when such is not the case) that is just as good and is compatible with all your old applications," Microsoft can discourage consumers and OEMs from considering switching to the new product.

Id. at 334–35.

In rejecting the government's position that "[p]roduct preannouncements do not violate antitrust laws unless those preannouncements are knowingly false and contribute to the acquisition, maintenance, or exercise of market share," *id.* at 336, Sporkin took the position:

> Regardless of how narrow the Government's view is, it is incumbent on the Government to address whether the defendant has been preannouncing products and what effect, if any, such preannouncements have had in eliminating competition in an increasing returns market where the market has clearly been tipped. Even if Microsoft's current practice of "preannouncing" did not meet the Government's definition of vaporware, shouldn't the Court be advised whether there is a basis for seeking to limit the practice in fashioning an antitrust remedy? . . .
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> This Court cannot ignore the obvious. Here is the dominant firm in the software industry admitting it "preannounces" products to freeze the current software market and thereby defeat the marketing plans of competitors that have products ready for market. Microsoft admits that the preannouncement is solely for the purpose of having an adverse impact on a competitor's product. Its counsel states it has advised its client that the practice is perfectly legal and it may continue the practice. This practice of an alleged monopolist would seem to contribute to the acquisition, maintenance, or exercise of market share.

The U.S. Court of Appeals for the D.C. Circuit quickly reversed Judge Sporkin's decision as beyond his power of review and remanded the case to another district judge for entry of an order approving the settlement.[6] Notwithstanding this abrupt reversal of Judge Sporkin's ruling, his comments regarding the potential for vaporware marketing tactics to constitute an antitrust violation animate this Article. The received wisdom in antitrust scholarship rejects Judge Sporkin's apparent assumption that vaporware marketing can indeed constitute such a violation.[7] This Article uses the *Microsoft* case as a springboard for a reexamination of that issue.

> The Government has pressed for the adoption of its decree on the grounds that it will open up competition. Given the Government's desire to open up competition why does it not want to take on the vaporware issue?
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> When the Court gave Microsoft the opportunity to disavow this practice by an undertaking it declined to do so. What is more, the Government told the Court that if it conditioned its approval on Microsoft's undertaking no longer to engage in the practice, the Government would withdraw its approval of the decree even if Microsoft agreed to the undertaking.
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> The Court cannot sign off on a decree knowing that the defendant intends to continue to engage in an anticompetitive practice without the Government providing a full explanation as to its "no action" stance. It would almost be the equivalent of a Court accepting a probationary plea from a defendant who has told the Court he will go out and *again engage* in inappropriate conduct.

Id.

[5] *Id.* at 338.

[6] *Microsoft*, 56 F.3d at 1449. Judge Sporkin's authority to review the consent decree was authorized, but also limited, by the Tunney Act. The court of appeals did not believe that the Tunney Act authorized Judge Sporkin to force the Department of Justice to make a claim regarding vaporware that the Department did not believe to be true and that was not necessarily related to the practices that the government had challenged. *Id.* at 1459–60.

The *Microsoft* case raised several interesting issues regarding the scope of a federal district judge's review powers under the Tunney Act that are beyond the purview of this Article. For general descriptions of the Tunney Act, see Maryellen Fullerton, Comment, *Exploring the Reaches of Mandamus*, 49 BROOK. L. REV. 1131 (1983); Justin Weaver Lilly, Comment, *A Judicial Role for Proceedings Involving Uncontested Modifications to Existing Consent Decrees*, 41 CATH. U. L. REV. 665 (1992); James C. Noonan, Note, *Judicial Review of Antitrust Consent Decrees: Reconciling Judicial Responsibility with Executive Discretion*, 35 HASTINGS L.J. 133 (1983); Note, *The Scope of Judicial Review of Consent Decrees Under the Antitrust Procedures and Penalties Act of 1974*, 82 MICH. L. REV. 153 (1983).

[7] *See, e.g.*, FRANKLIN M. FISHER ET AL., FOLDED, SPINDLED, AND MUTILATED: ECONOMIC ANALYSIS AND *U.S. v. IBM* 289–90, 299 (1983) [hereinafter FISHER ET AL.] ("There is no reason to inhibit the time when a firm announces or brings products to the marketplace."); Robin C. Landis & Ronald S. Rolfe, *Market Conduct Under Section 2:*

Part II describes in some detail the history, purposes, and important characteristics of the use of vaporware marketing in high-tech industries in the United States.[8] Part III briefly summarizes the basic law of monopolization and attempted monopolization, focusing on the types of conduct that are generally deemed violative of the Sherman Act's section 2 prohibitions.[9]

Parts IV and V tackle the central question of the Article: Under what circumstances, if any, should vaporware marketing tactics be deemed an antitrust violation? More specifically, when, if ever, should such tactics be deemed to meet the conduct requirement of a section 2 Sherman Act monopolization or attempt to monopolize violation?[10] Part IV attempts to

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When Is It Anticompetitive?, *in* ANTITRUST AND REGULATION 131, 140 (Franklin M. Fisher ed., 1985) ("Except under implausible assumptions, [use of vaporware] cannot, even in principle, have any anticompetitive effect."); Ramsey Hanna, Note, *Misusing Antitrust: The Search for Functional Copyright Misuse Standards*, 46 STAN. L. REV. 401, 443 (1994) ("A[n antitrust] basis for liability based on [Microsoft's] product preannouncements would also appear to be lacking."); John E. Lopatka & William H. Page, *Microsoft, Monopolization, and Network Externalities: Some Uses and Abuses of Economic Theory in Antitrust Decision Making*, 40 ANTITRUST BULL. 317, 356–61 (1995) [hereinafter Lopatka & Page, *Microsoft*] (arguing that accurate product preannouncements should be per se legal, that innocent but inaccurate preannouncements should be legal, and that even fraudulent inaccurate preannouncements are the stuff of tort law rather than antitrust law); Janusz A. Ordover & Robert D. Willig, *An Economic Definition of Predation: Pricing and Product Innovation*, 91 YALE L.J. 8, 53 (1981) ("[A]ny timing of a product preannouncement should be presumed legal."); Philip Elmer-DeWitt, *Tripping Up the Titan*, TIME, Feb. 27, 1995, at 31, 33 [hereinafter Elmer-DeWitt, *Tripping*] (quoting Professor William Kovacic at Washington College of Law at American University for the proposition that Judge Sporkin does not seem to realize these issues, including product preannouncements, were litigated in the 1970s against companies like Kodak and IBM and "'with very few exceptions, [defendants] beat those plaintiffs into the ground'").

On the other hand, Areeda and Turner seem to agree that vaporware marketing can be illegal *if* it is fraudulent. PHILLIP AREEDA & DONALD TURNER, ANTITRUST LAW, ¶ 738i, at 284 (1978).

[8] *See infra* notes 18–113 and accompanying text.

[9] *See infra* notes 114–33 and accompanying text.

[10] 15 U.S.C. § 2 (1994). The statute reads:

> Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine not exceeding $10,000,000 dollars if a corporation, or, if any other person, $350,000, or by imprisonment not exceeding three years, or by both said punishments, in the discretion of the court.

answer these questions regarding *fraudulent* vaporware marketing—cases where product preannouncements are made by firms that have no reasonable belief that they can produce the promised products at the promised times.[11] Part V attempts to answer the above questions regarding *innocent* vaporware marketing—situations where product preannouncements are made by firms that do reasonably believe that they can produce the promised products at the promised times but fail to do so.[12]

In substantial part, this Article will attempt to determine whether vaporware marketing should take its place among several recently articulated theories of nonprice predation, such as raising rivals' costs (RRC), predatory product innovation, and predatory brand proliferation, that populate the "post-Chicago" world of antitrust commentary.

This Article does not constitute a legal brief attacking Microsoft.[13] Rather, it simply uses the Microsoft litigation to provide background and

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[11] *See infra* notes 134–315 and accompanying text. Until Part IV, this Article has no strong reason to distinguish, and therefore does not, between the fraudulent and innocent forms of vaporware marketing.

[12] *See infra* notes 316–75 and accompanying text.

[13] Nor does this Article pretend to reexamine fundamental issues such as whether antitrust law is, on balance, good or bad, or to enter the protracted debate as to the proper focus of the antitrust laws (protection of consumer welfare versus promotion of small, competitive business, versus protecting individuals from massive aggregations of capital, and the like).

Rather, this Article simply assumes that antitrust law has a valid role to play in today's economy and that the Sherman Act should not be implicitly repealed on the basis of various economic theories that were unknown to its framers and that have not convinced subsequent Congresses to repeal it. *See* Herbert Hovenkamp, *Rhetoric and Skepticism in Antitrust Argument*, 84 MICH. L. REV. 1721, 1728 (1986) ("[A]ny such confession in a democratic country must make some attempt to acknowledge that the legislature has a hand in making policy, and that this requires deference to the legislature even if its policy is inconsistent with the economic model espoused by the judge.").

The Article therefore implicitly rejects the strictest versions of the Chicago School antitrust analysis that dominated the 1980s. That view, of course, is that there is only the smallest role for antitrust law to play in modern economies. This viewpoint is spelled out cogently in a series of articles by Judge Easterbrook. *See, e.g.*, Frank H. Easterbrook, *Allocating Antitrust Decisionmaking Tasks*, 76 GEO. L.J. 305 (1987); Frank H. Easterbrook, *Ignorance and Antitrust*, *in* ANTITRUST, INNOVATION, AND COMPETITIVENESS 119 (Thomas M. Jorde & David J. Teece eds., 1992) [hereinafter Easterbrook, *Ignorance and Antitrust*]; Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1 (1984); Frank H. Easterbrook, *Monopolization: Past, Present, Future*, 61 ANTITRUST L.J. 99 (1992); Frank H. Easterbrook, *On Identifying Exclusionary Conduct*, 61 NOTRE DAME L. REV. 972, 974 (1986) [hereinafter Easterbrook, *On Identifying*]; Frank H. Easterbrook, *Predatory*

context for examination of a compelling and fascinating issue. Microsoft's strong market power,[14] aggressive pursuit of market dominance,[15] and

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Strategies and Counterstrategies, 48 U. CHI. L. REV. 263 (1981) [hereinafter Easterbrook, *Predatory Strategies*]; Frank H. Easterbrook, *Workable Antitrust Policy*, 84 MICH. L. REV. 1696 (1986).

Although the Chicago School has made an invaluable contribution to antitrust analysis, this Article's underlying premise is more attuned to those who still believe that there is an important role for antitrust law to play that is currently underappreciated but becoming more recognized in what some call the "post-Chicago" era. *See, e.g.*, Walter Adams & James W. Brock, *Antitrust, Ideology, and the Arabesques of Economic Theory*, 66 COLO. L. REV. 257 (1995) (issuing a broadside attack on Chicago School economic theory's restrictive impact on antitrust law); Herbert Hovenkamp, *Antitrust's Protected Classes*, 88 MICH. L. REV. 1 (1989) (arguing that ascendant Chicago School approach ignores legitimate classes of plaintiffs such as competitors and potential competitors that the Sherman Act was passed to protect); William B. Tye, *Market Imperfections, Equity, and Efficiency in Antitrust*, 37 ANTITRUST BULL. 1 (1992) (pointing out flaws and contradictions in the Chicago School view of antitrust law); Oliver E. Williamson, *Delimiting Antitrust*, 76 GEO. L.J. 271 (1987) [hereinafter Williamson, *Delimiting Antitrust*] (expressing concern that efforts to limit the scope of antitrust law may overshoot the mark); Michael Porter, *Japan Isn't Playing by Different Rules*, N.Y. TIMES, July 22, 1990, at F13 (Because key to strong international economic performance is intense competition in home markets, "[w]hat is needed today in American industry is not less competition but more. Instead of relaxing antitrust enforcement, we should be tightening it.").

[14] Nearly half the total PC software revenue in the world goes directly to Microsoft, *see* James Gleick, *The Microsoft Monopoly*, N.Y. TIMES MAG., Nov. 5, 1995, at 50, 51, helping Microsoft to be valued as highly as IBM or General Motors on just a fraction of the sales, *see The Future of Microsoft: Today Windows, Tomorrow the World*, THE ECONOMIST, May 22, 1993, at 25, 25, and making Bill Gates the world's richest man. *See* Hiroko Asami et al., *The Superrich*, FORBES, July 15, 1996, at 124 ($18 billion).

This success springs largely from the fact that Microsoft's operating systems software run 85% of the world's personal computers. *See* Elizabeth Corcoran, *Long-Delayed Apple Clones May Bear Fruit: Search Is Underway for License Partners*, WASH. POST, Sept. 19, 1994, at F21. The successively greater market acceptance of Microsoft's MS-DOS, Windows, and Windows 95 operating systems have assured Microsoft's paramount status. Apple Computer is clearly floundering with but a relatively tiny market share, *see* Peter Burrows, *The Fall of an American Icon*, BUS. WK., Feb. 5, 1996, at 34, 34, while IBM's OS/2, Microsoft's only serious competitor for the non-Macintosh operating systems market, has sold only half the copies in its entire six-year history that Microsoft's Windows 95 sold in its first five months. *See Microsoft Reports Earnings Jump*, THE REUTER BUS. REP., Jan. 17, 1996 (Windows 95 sold 18 million units by January 1996, five months after it was released on the market); Jim Erickson, *IBM Hopes China Picks Warp Over Windows*, AUSTIN AM.-STATESMAN, May 15, 1995, at D1 (stating that OS/2 had fewer than 10 million users worldwide).

Windows 95 has become the fastest selling software product in history at forty million copies in its first year. *See* James Eng, *Windows 95 Marks First Year in Shadow of a Power Struggle*, AUSTIN AM.-STATESMAN, Aug. 24, 1996, at D5. Yet, Windows 95 may ultimately pale in comparison to the importance of Microsoft's Windows NT. *See* Don Clark, *A Dud at Its Birth, Windows NT is Back As Networking Force*, WALL ST. J., July 29, 1996, at A1.

In recent years, Microsoft has leveraged its dominate position in operating systems software into tremendous success in applications software by bundling applications with the operating systems in such a fashion as to make them seem like part of the operating system. *See* Andrew Schulman, *Microsoft's Grip on Software Tightened by Antitrust Deal*, DR. DOBB'S J. SOFTWARE TOOLS, Oct. 1994, at 143. Microsoft has thereby taken leadership in the word-processing market away from WordPerfect, *see* Judy Fahys & Steven Oberbeck, *Utahns High on High-Tech Merger But Wary Wall Street Gives Low Marks Initially to Novell-WordPerfect Deal*, SALT LAKE TRIB., Mar. 23, 1994, at A1, gobbled up 87% of the market for suites, *see* Jeffrey Henning, *Dominant Microsoft Here to Stay*, COMPUTERWORLD, Feb. 27, 1995, at 49, taken control of the scheduling and filing markets with Project and Access, *see* Philip Elmer-DeWitt, *Mine, All Mine*, TIME, June 5, 1995, at 46, 50 [hereinafter Elmer-DeWitt, *Mine*], challenged Lotus for dominance in the spreadsheet market, *see id.*, challenged Borland in the database market, *see The Future of Microsoft: Today Windows, Tomorrow the World*, THE ECONOMIST, May 22, 1993, at 25, 25, and set in motion its plan to dominate the Internet as well, *see* John M. Morgan, *Microsoft Challenges Netscape for Market Dominance*, BUFFALO NEWS, Apr. 30, 1996, at 8E.

Several histories of Bill Gates and Microsoft provide substantial detail regarding its dazzling success. *See, e.g.*, DANIEL ICHBIAH & SUSAN L. KNEPPER, THE MAKING OF MICROSOFT (1991); STEPHEN MANES & PAUL ANDREWS, GATES: HOW MICROSOFT'S MOGUL REINVENTED AN INDUSTRY AND MADE HIMSELF THE RICHEST MAN IN AMERICA (1994); JAMES WALLACE & JIM ERICKSON, HARD DRIVE: BILL GATES AND THE MAKING OF THE MICROSOFT EMPIRE (1992); James Gleick, *supra* at 50 (presenting a post-Windows 95 update of Microsoft's monopolistic successes and goals).

For a more academic look at Microsoft's product development and management style, see MICHAEL A. CUSUMANO & RICHARD W. SELBY, MICROSOFT SECRETS (1995) and FRED MOODY, I SING THE BODY ELECTRONIC (1995).

[15] Bill Gates has long been dubbed "The Silicon Bully." Phil Reeves, *Hardball in the Software League*, THE INDEPENDENT, Sept. 26, 1993, at 14. He has frequently threatened or promised to put competitors out of business. *See generally* WALLACE & ERICKSON, *supra* note 14, at 211–12 (Bill Gates quoted as saying, "We're going to put Digital Research out of business."); *id.* at 278 (Gates vowed to put Lotus Development out of business.); *id.* at 382 (Gates "declared war" on Adobe Systems.).

Competitors allege that Microsoft's primary strategy for achieving dominance is to use its position in one market to enter new markets and "[t]hen they make it unprofitable long enough [to shake out] the other players so that they end up gaining massive amounts of [market] share." *Computers & Technology*, INVESTOR'S BUS. DAILY, Dec. 7, 1994, at A8 (quoting Philippe Kahn, chairman of Borland International, Inc.) (first alteration in original). Furthermore, Microsoft has made clear its goal is 100% of market share. *See*

alleged use of vaporware marketing tactics all provide a factual framework to highlight the plausibility and practical importance of the issues discussed. However, the reader must keep in mind that Microsoft denies any improper use of vaporware, that the Department of Justice, after substantial investigation, refused to pursue any vaporware claims against Microsoft, and that Microsoft has had no opportunity to present evidence in a court of law to defend its marketing practices in this regard. Indeed, Microsoft has also been a victim of apparent vaporware marketing tactics,[16] and given its penchant for attacking new markets with established players, might just as likely be a plaintiff as a defendant in some future suit over the issue.[17]

Stuart Taylor, Jr., *What to Do with the Microsoft Monster*, AM. LAW., Nov. 1993, at 72, 78 (quoting Michael Maples of Microsoft: "My job is to get a fair share of the software applications market, and to me that's one hundred percent."). Gates has predicted that Microsoft could double in size in the foreseeable future. *See* James Eng, *Gates: Microsoft Could More Than Double in Size*, AUSTIN AM.-STATESMAN, Oct. 16, 1995, at C5.

[16] Examples include the following:

• Ann Arbor Softworks ran an advertisement telling customers not to buy a new Microsoft word processing program but to wait instead for Ann Arbor's Fullwrite program which was, it turned out, still months away from being commercially available. *See* Lindsy Van Gelder, *Vaporware for Sale*, LOTUS, Feb. 1988, at 140.

• To counteract a Microsoft product announcement, Lotus preannounced a version of its 1-2-3 spreadsheet for Apple's Macintosh that did not ship for three years. *See* Stephen Kreider Yoder, *Computer Makers Defend 'Vaporware,'* WALL ST. J., Feb. 16, 1995, at B1.

• In 1994, Apple preannounced its next-generation operating system, Copland, though it was still at least two years away from the market in order "to blunt Chicago's [Windows 95's] momentum . . . ." G. Pascal Zachary & Jim Carlton, *Software Rivals Vying to Define How PCs Work*, WALL ST. J., Mar. 7, 1994, at B1.

• In November, 1995, after Windows 95 had already shipped, Apple Computer again began hyping Copland as a method of blunting Windows 95's impact, even though it was unlikely that the product would ship before 1997. *See* Peter Burrows, *New! Improved! Not Here Yet!*, BUS. WK., Dec. 18, 1995, at 80, 80.

[17] Especially since IBM acquired Lotus, Microsoft is not the only 800-pound gorilla in the software industry. *See* Laurie Hays & Steven Lipin, *Lotus Gives In and Accepts IBM Offer of $3.52 Billion, a Sweetened $64 a Share*, WALL ST. J., June 12, 1995, at A3 (the largest software acquisition on record).

II. VAPORWARE IN HIGH-TECH INDUSTRY

A. *Vaporware and the Challenges of High-Tech Marketing*

Marketing efforts are critical to the success of virtually every product,[18] but marketing is especially essential to the success of high-tech products.[19] In substantial part, this is true because of the exceedingly rapid evolution of high technology and the need of companies that wish to stay competitive to constantly introduce new products. Launching new products, 80% of which fail,[20] typically requires elaborate advertising and a coordinated marketing effort. Misguided marketing plans can doom a product,[21] and indeed, an entire company.[22]

Computer and other high-tech companies have recognized the importance of marketing in several ways, including by spending large sums to hire package-goods marketing experts away from low-tech companies such as Procter & Gamble, Nabisco, and Kraft General Foods.[23] The

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[18] *See* DAVID J. LUCK & O.C. FERRELL, MARKETING STRATEGY AND PLANS 312 (2d ed. 1985) ("*Promotion* is the second most critical functional area [besides the product itself] in probably all new products."); R.G. Cooper, *The Dimensions of Industrial New Product Success and Failure*, 43 J. MARKETING 93, 103 (1979) (stating that the product is the most important, but marketing factors are "critical").

[19] *See* WILLIAM H. DAVIDOW, MARKETING HIGH TECHNOLOGY xviii (1986) ("Increasingly, marketing will determine the fate of [high-tech firms.]"); WILLIAM L. SHANKLIN & JOHN K. RYANS, JR., ESSENTIALS OF MARKETING HIGH TECHNOLOGY 40 (1987) ("Marketing knowledge and expertise is vital to the success of high-tech firms."); *see also* Dennis J. Cahill & Robert M. Warshawsky, *The Marketing Concept: A Forgotten Aid for Marketing High Technology Products*, 10 J. CONSUMER MARKETING 17 (1993) (arguing that marketers should take back control of high-tech product development from engineers to ensure that companies develop products that consumers really will want to buy).

[20] *See* GERHARD ROSSEGER, THE ECONOMICS OF PRODUCTION AND INNOVATION: AN INDUSTRIAL PERSPECTIVE 10 (2d ed. 1986); *see also* Dee M. Wellan & A.S.C. Ehrenberg, *A Successful New Brand: Shield*, J. MARKETING RES. SOC'Y, Jan. 1988, at 35 ("[T]he failure rate of new brands remains high."). There is wide variation from industry to industry in new product success rates.

[21] *See* Nico Krohn, *Not As Easy as 1-2-3*, INFOWORLD, Apr. 1, 1991, at 40, 41 (citing examples, including Ovation Technologies' integrated software package which became permanent vaporware).

[22] *See* DAVIDOW, *supra* note 19, at xvii.

[23] *See* Kenneth Traynor & Susan C. Traynor, *Marketing Approaches Used by High Tech Firms*, 18 INDUS. MARKETING MGMT. 281, 286 (1989) ("It is clear that the marketing efforts of high tech firms are as important, if not more important, than the reliance on state-of-the-art technology."); Kyle Pope, *New Job Path: From Cookies to Computers*, WALL ST. J., May 9, 1994, at B1.

means and methods of high-tech marketing have been explicated in detail elsewhere.[24] However, it is worth emphasizing here that prelaunch marketing programs must generally be aimed not just at consumers, but at vendors, providers of needed support products (such as applications software), government and regulatory agencies, independent computer consulting firms, financial analysts, investors, the media, and other types of stakeholders.[25] Because of the complex and interrelated nature of the modern world of technology, a marketing campaign, including one with a vaporware component, that does not include all of these constituencies may well fail. For example, consumers often rely upon the media to provide guidance as to reliable products.[26] A company that does not win favorable media attention may never win many customers either.

Given the intense pressure to promote high-tech products, it is not surprising, perhaps, that the practice of product preannouncing was devised. Present from the very beginnings of the computer industry,[27] such preannouncements are currently common in high-tech industries.[28] Indeed, an entire vocabulary has been developed for the practice, which is variously called "vaporware," "preannouncing," "ambush marketing," and "FUD-factor marketing"—FUD standing for the "fear, uncertainty and

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Indeed, Microsoft launched its fabulously successful word processing program, Microsoft Word, much as though it were a bar of soap by sending out free samples. The Microsoft employee behind the plan, Rowland Hansen, had been a vice-president of marketing for Neutrogena Corporation and a marketing manager for General Mills. *See* WALLACE & ERICKSON, *supra* note 14, at 242–43.

[24] *See* Robert A. Prentice & John H. Langmore, *Beware of Vaporware: Product Hype and the Securities Fraud Liability of High-Tech Companies*, 8 HARV. J.L. & TECH. 1, 4–8 (1994); *see also* GEOFFREY A. MOORE, INSIDE THE TORNADO (1995) (discussing consultant's recent view of high-tech marketing strategies in general).

[25] *See* Jerry Wind & Vijay Mahajan, *Marketing Hype: A New Perspective for New Product Research and Introduction*, 4 J. PROD. INNOVATION MGMT. 43, 44 (1987).

[26] *See* MANES & ANDREWS, *supra* note 14, at 241 (noting that "influential core users rel[y] far more heavily on editorial coverage in computer magazines than on advertisements").

[27] *See* Philip Elmer-DeWitt, *Hardware, Software, Vaporware: Tardy Technology Bedevils an Adolescent Industry*, TIME, Feb. 3, 1986, at 51 ("Delays and broken promises have bedeviled the computer business since its birth some 35 years ago.").

[28] *See* Dean Takahashi, *Computer Show Features Wares That Don't Exist*, L.A. TIMES (Orange Co. ed.), Oct. 22, 1991, at D8 (quoting AST Research, Inc. cochairman Thomas Yuen as saying "[t]his has become a vaporware industry"); Van Gelder, *supra* note 16, at 140 (stating that vaporware "is rampant in the computer industry").

doubt" meant to be created in the minds of the competition's potential customers.[29]

B. *Legitimate Uses of Vaporware Announcements*

Vaporware announcements have often played a role in the success of high-tech companies offering innovative and useful products. Where a new architecture is at stake, using marketing to create the impression that a product is winning the battle for market supremacy may be sufficient to enable the announcing company to actually do so.[30] Preannouncing paves the way for consumer acceptance by creating a "prior subconscious sense of familiarity or acceptance" that diminishes consumer resistance to the unknown and unfamiliar.[31] Thus, vaporware preannouncements can be an essential element in a small company's strategy for breaking into a high-tech market and setting standards.[32]

In addition to enabling innovative companies to bring their products successfully to market, vaporware announcements may also provide valuable information to consumers who are then better able to plan for their future product needs.[33] Vaporware announcements can reassure consumers as to the stability of a company and assure them that the

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[29] *See* Wayne Eckerson, *Users Want Network Vendors to Stop Using "Vaporware" Tactics*, NETWORK WORLD, July 10, 1989, at 4 (quoting network analyst Mary Modahl as saying that "[t]he one legitimate use of vaporware is that it reassures customers of a vendor's direction" so that the customers can plan their long-term purchasing strategies); *Vaporware Wins No Laughs at Microsoft Now*, SAN DIEGO UNION-TRIB., Feb. 21, 1995, at 1.

[30] *See* Michael R. Leibowitz, *The Microprocessor Marketing Wars*, ELECTRONIC BUS., July 10, 1989, at 28, 31 (quoting T.J. Rogers, CEO of Cypress Semiconductor Corp., as saying that "[t]here's enough ambiguity that it is really a marketing pitch that will win or lose this war" for the RISC (reduced instruction set computing) chip market).

[31] *See* LEO BOGART, STRATEGY IN ADVERTISING 72 (1967).

[32] *See* Stephane St-Onge, *General Magic Aims to Set Standard for Tiny Computers*, FIN. POST, July 10, 1993, at C16.

[33] *See* Donald J. Boudreaux, *Microsoft's Great Business Secret*, WASH. TIMES, Mar. 3, 1995, at A21; Laurie Flynn, *The Executive Computer*, N.Y. TIMES, Apr. 24, 1995, at D4 (citing Microsoft "white paper" on vaporware); *Systematics Offers Peek at Product*, AM. BANKER, June 14, 1989, at 10, 10 (reporting that Systematics commenced preannouncing products so that customers would know what the company's future plans were).

company is at the forefront of technological developments[34] and that its products will continue to meet their needs.

Vaporware announcements can carry useful information for vendors of high-tech products as well. Preannouncing gives vendors an opportunity to plan for their inventory and marketing needs before new products hit retail shelves.[35]

Another practical benefit of vaporware preannouncements is that they can be used to stimulate complementary activity by third parties, such as when IBM noted in the 1986 preannouncement of its professional work station that software was limited, thereby creating an incentive for third parties to produce such software.[36] By providing information about operating systems in development, Microsoft often gives software developers the tools they need to create new software.[37] This point cannot be overemphasized—the extensive software industry that is based upon creating applications for Microsoft operating systems depends heavily upon advance information supplied by Microsoft.

Vaporware announcements can also be aimed at investors and creditors of high-tech companies, demonstrating to them that the announcing companies are in the vanguard of technological trends.[38] Corporate managers and professional investors often like to know where research and development money is being spent, and vaporware announcements can provide that information.[39]

Citing all these beneficial effects of vaporware, many have argued that preannouncements of products, *so long as they are generally truthful*, increase consumer welfare[40] and promote rather than depress competition.[41] These benefits of product preannouncements flow from "vaporware" as that term is used in its least pejorative sense. These benefits flow from honest predictions of the features and availability dates

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[34] *See* Samuel Rabino & Thomas E. Moore, *Managing New-Product Announcements in the Computer Industry*, 18 INDUS. MARKETING MGMT. 35, 39 (1989).

[35] *See* Mark Lacter, *Judge Went Beyond the Antitrust Spirit in His Microsoft Ruling*, SACRAMENTO BEE, Feb. 21, 1995, at B7.

[36] *See* Rabino & Moore, *supra* note 34, at 40.

[37] *See* Bill Gates, *They're Talking, We're Selling*, WALL ST. J., Mar. 16, 1995, at A22.

[38] *See* Grace Casselman, *Vaporware: Vile or Valid?*, COMPUTING CANADA, Dec. 19, 1991, at 1.

[39] *See* Linda Bridges, *The Sweet Smell of Vaporware Starts to Turn Sour for Many Micro Managers*, PC WK., Nov. 17, 1987, at 19 (quoting Ray Paul, manager of sales and information planning for Nabisco Brands).

[40] *See* Landis & Rolfe, *supra* note 7, at 140.

[41] *See* FISHER ET AL., *supra* note 7, at 289.

of products that are in development but not yet ready for market. Of course, not all of the products will meet projected release dates. Others may not carry all the promised features. Others may never see the light of day. After all, the design, testing, and manufacturing of high-tech products is a very complicated business. Many projects are so very complex that it is nearly impossible to know when all the glitches will be worked out. Not all delays are foreseeable.[42] Not all broken promises are broken intentionally.

C. *Illicit Uses of Vaporware*

Unfortunately, the term "vaporware" sometimes carries a darker connotation. Often, product preannouncements are not made for the purpose of providing consumers and others with valuable information about the announcing company's good faith plans for completion of products currently in development. Instead, the vaporware announcements are made recklessly or in bad faith by companies who know with substantial certainty that their promised deadlines will not be met, that their products will not carry the promised features, or that their promised products most likely will never reach the market. Sometimes the products exist only in the minds of their developers.[43] Frequently, manufacturers' hype is so disingenuous that their imagined products do not "even qualify as vapor."[44] Distinguishing between "good faith" vaporware announcements and fraudulent vaporware announcements is therefore important. The former announcements can be useful to customers and others. The latter announcements can only confuse and cause damage.[45]

Fraudulent vaporware announcements injure customers who cannot make an informed decision regarding whether to buy a currently available product that meets their needs or to wait for a product that might be better,

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[42] *See* Lori Hawkins, *High-Tech Mirages*, AUSTIN AM.-STATESMAN, Mar. 6, 1995, at C1 [hereinafter Hawkins, *High-Tech Mirages*] (quoting industry analysts Jo Ann Stahel and Cheryl Currid).

[43] *See generally* Takahashi, *supra* note 28, at D8 (noting that 30 companies were preannouncing pen-based computers at the 1991 Comdex computer convention).

[44] John Schwartz, *The Next Revolution*, NEWSWEEK, Apr. 6, 1992, at 42, 45 (complaining that John Sculley appeared on the cover of *Fortune* magazine holding a molded, plastic prop of a product that did not yet exist).

[45] *See* Bridges, *supra* note 39, at 19.

but that also might make it onto the market only after a great delay, if ever.[46]

Inaccurate vaporware announcements also injure vendors who cannot make accurate plans for future marketing and inventory efforts. These announcements can also infuriate vendors who may have difficulty selling competitors' products because of a vaporware announcement, but cannot sell the announcing company's products because those products are not yet ready and may not be for some time, if ever.[47]

Vaporware can even injure the announcing company in several ways. Product preannouncements can slow down the sales of the announcer's existing products that will be outmoded if and when the promised products reach the market.[48] Additionally, product preannouncements can inform competitors of a company's plans, allowing the competitors to meet or beat the announcer to its goal.[49] Furthermore, small companies can vaporize themselves by repeatedly disappointing customers.[50]

Given the substantial "down side" to fraudulent vaporware announcements, why is the practice so widespread? One very plausible explanation lies in the anticompetitive uses of vaporware announcements. New product announcements—whether made when the products are to be launched or substantially in advance of that date—are usually made not just to inform consumers of the arrival of new products. Instead, they are also usually made to advance management's strategic objectives,[51] which can be anticompetitive in nature. According to Professors Rabino and Moore, among the specific goals management may have in mind in preannouncing a product are: "(1) to preempt the competition by encouraging buyers to await the firm's new product rather than purchase a competitor's;

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[46] *See* Eckerson, *supra* note 29, at 4; Sam Whitmore, *Buyers Beware Perils of Product Preannouncements*, PC WK., June 24, 1991, at 62 ("Buyers can be left precariously wondering which capabilities are real, and what recourse they have if vendors strategic to them happen to change their minds.").

[47] *See* REGIS MCKENNA, WHO'S AFRAID OF BIG BLUE? 118–19 (1989) (giving as an example IBM's preannouncement of its PCjr before the 1983 Christmas season).

[48] This phenomenon is sometimes called the "Osborne effect" because the demise of the Osborne Computer Co. is traced in substantial part to this phenomenon. Casselman, *supra* note 38, at 1.

[49] *See id.* at 1 (quoting computer consultant Amy Wohl).

[50] *See* Hawkins, *High-Tech Mirages*, *supra* note 42, at C1 (citing as examples VisiCorp and Gavilan Computer Corp.).

Wang Laboratories' downfall has been traced in large part to a reckless vaporware announcement of 14 new products which did not exist and mostly never came into existence. *See* CHARLES C. KENNEY, RIDING THE RUNAWAY HORSE 125–47 (1992).

[51] *See generally* MICHAEL E. PORTER, COMPETITIVE STRATEGY 75–78 (1980).

(2) communicate plans for a retaliatory move against a competitor; (3) test a competitor's reaction; or (4) redefine a competitive industry position . . . ."[52]

All four of these goals may be accomplished with fraudulent product preannouncements as well as with legitimate, good faith preannouncements. Whether the goal is to slow down purchases of competitors' products[53] or to buy time for the announcing company to get its own act together,[54] Professors Parks, Pharr, and Lockeman conclude that vaporware announcements are often used to "deflect[] an opponent's momentum by the announcement of new products, *whether or not they exist.*"[55]

For example, when Intel introduced its model 8086 16-bit microprocessor in 1978, Zilog and Motorola immediately announced their competing vaporware products,[56] hoping that consumers would refrain from purchasing Intel's product until they could complete and bring their own to market. In early 1994, as the market began to lavish attention upon Microsoft's then-unfinished Windows 95 (then code-named "Chicago") operating system software, Apple announced its System 7 upgrade of Macintosh software in order "to blunt Chicago's momentum."[57] Apple made this announcement despite the fact that the improvements were at least two years away from being available to consumers, even in the unlikely event they hit their target date. On the same day, "in hopes of stealing some fire" from Apple Computer's launch of its Macintosh line using the new, speedy PowerPC chip, several PC makers preannounced plans to begin marketing units incorporating Intel's Pentium Chip.[58]

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[52] Rubino & Moore, *supra* note 34, at 35, 36.

[53] *See* JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION 408 (1988); Casselman, *supra* note 38, at 1 (quoting Ian Fraser, vice-president of marketing for Merisel Canada).

[54] *See* Whitmore, *supra* note 46, at 62.

[55] Bill Parks et al., *A Marketer's Guide to Clausewitz: Lessons for Winning Market Share*, BUS. HORIZONS, July 1994, at 68, 71 (emphasis added); *see also* Hawkins, *High-Tech Mirages*, *supra* note 42, at C1 (quoting computer market analyst Cheryl Currid as saying, "Your competitor announces a new product, you announce a competing product—*whether there is a product or not.*") (emphasis added).

[56] *See* DAVIDOW, *supra* note 19, at 3 (using the term "paper tiger" to also indicate a product that does not yet exist).

[57] G. Pascal Zachary & Jim Carlton, *Software Rivals Vying to Define How PCs Work*, WALL ST. J., Mar. 7, 1994, at B1.

[58] Jim Carlton & Don Clark, *PC Makers to Launch Machines Using New Version of Intel's Pentium Chip*, WALL ST. J., Mar. 7, 1994, at B6.

Whether legitimate or illegitimate, whether done in good faith or bad faith, vaporware practices are becoming increasingly extravagant. "[C]ompetitive pressure and the public's growing tolerance for hype prompts more companies to announce what they're hoping to do well before they've even figured out how to do it."[59] Judge Sporkin's opinion in the *Microsoft* case reignited a long-standing debate in the high-tech industry itself about the ethics of these increasingly prevalent vaporware marketing tactics.[60]

D. *Microsoft's Use of Vaporware*

Microsoft is widely alleged to be an accomplished player in the vaporware game. It has often stood atop a list of vaporware practitioners that is published regularly by *PC Letter*.[61] Microsoft finished first (by a wide margin) in a 1995 poll of information systems professionals asked to name the most aggressive preannouncer of products in the computer industry.[62] Microsoft allegedly has been aggressive and successful in using such preannouncements not only to promote its own products, but also to freeze the markets for competitors' products, perhaps unfairly.[63] There are many examples of Microsoft's alleged vaporware marketing:

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[59] Bob Donath, *Roadkill in the Backroom*, MARKETING NEWS, Apr. 25, 1994, at 13, 13.

[60] *See* Stuart J. Johnston & Mitch Betts, *Industry Debates U.S. Vaporware Probe*, COMPUTERWORLD, Feb. 13, 1995, at 2.

[61] *See Vaporware Wins No Laughs at Microsoft Now*, *supra* note 29, at 1 (quoting *P.C. Letter* publisher David Coursey).

[62] *See* Stuart J. Johnston, *Vaporware Tactics Elicit Mixed Views*, COMPUTERWORLD, May 1, 1995, at 1, 47. Among other findings of the poll were (a) that IS professionals do not want the federal government involved in regulating product preannouncements, (b) that Microsoft is viewed as using vaporware announcements to "freeze the market" for competitors' goods, but may be no more aggressive in doing so than some other companies, and (c) that information coming from preannouncements is useful to these professional consumers, but they feel they generally do not need to know about products that are more than three to six months away from the market. *Id.*

[63] *See* Andrew Schulman, *The United States Versus Bill Gates*, NEWSWEEK, July 11, 1994, at 43, 43.

> [C]ompetitors say that Microsoft, like IBM in its heyday, specializes in spreading FUD—"fear, uncertainty and doubt"—with deliberately unrealistic or premature announcements of products it says it will release. The idea, say critics, is to make customers reluctant to buy from a competitor until they see what Microsoft has coming.

Id.

• Although no one accuses Bill Gates of having invented vaporware, he seems to have been one of its earliest practitioners.[64] The story of how Microsoft founders Bill Gates and Paul Allen got into the computer business by writing software for the earliest personal computer—MITS's Altair in Albuquerque—is legend. Several competitors were promising MITS's president Ed Roberts that they could write BASIC software for the Altair. Gates got his foot in the door by promising Roberts that he and Allen could deliver a working BASIC to MITS within three weeks; it took seven.[65] According to Allen, Gates told Roberts that they had the BASIC program when, in fact, they had not yet written it.[66]

• One of the key developments that lifted Microsoft from a shoestring operation to a big league player involved a bit of vaporware. In 1977, Microsoft was selling its version of programming languages like BASIC and FORTRAN which, coincidentally, meshed well with CP/M, the standard operating system on the Intel 8080 microprocessor. Because the 8080 was becoming an industry leader, Microsoft's products were doing well. But in 1978, Intel released a new 16-bit microprocessor called the 8086, which Microsoft's products could not work with. IBM approached Gates about developing BASIC for the 8086 (soon changed to the 8088), and Gates cemented Microsoft's successful future by promising delivery of a new BASIC program. Microsoft missed virtually every production deadline set in its agreement with IBM.[67] In fact, in its early days, Microsoft "would always underestimate" time of completion, according to Microsoft insider Steve Wood.[68]

• In the early 1980s, Microsoft made substantial inroads into Japanese markets. Microsoft succeeded, in large part, by providing products that were not available elsewhere. But, typically, Microsoft also repeatedly

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[64] Not only was Bill Gates one of the earliest practitioners of vaporware marketing tactics, it seems likely that the term "vaporware" itself was coined in Microsoft's own labs in 1982. Ann Winblad, cofounder of Open Systems who actually dated Bill Gates at one time, is credited with popularizing the term. She claims that she first heard it from Microsoft engineers John Ulett and Mark Ursino when she asked them about an operating system they were working on. They used the term to indicate that the project had run out of steam. Later, the term came to have broader connotations. *See generally* Flynn, *supra* note 33, at D4.

[65] *See* WALLACE & ERICKSON, *supra* note 14, at 78.

[66] *See* MANES & ANDREWS, *supra* note 14, at 71 (quoting Paul Allen).

[67] *See* WALLACE & ERICKSON, *supra* note 14, at 192.

[68] *Id.* at 120–21, 135–36; *see also id.* at 152 (In Microsoft's early years, "[d]eadlines were often missed, products weren't always well designed, and contracts had to be revised due to unforeseen obstacles or delays.").

missed product delivery dates, imbuing its products with a strong vaporous quality.[69]

• In 1982, Microsoft began working on a graphical user interface ("GUI") technology similar to what eventually became the basis for the very popular Apple Macintosh. Originally approved as a 6 work-year investment of programmer time, it ultimately took more than 80 work-years before it was issued in 1985—two years behind schedule—as Windows.

After VisiCorp announced at the fall 1982 Comdex trade show that it was working on something similar called VisiOn, Gates implied at a January 1983 press conference that Microsoft would ship its product before VisiOn could reach the market, even though Microsoft had yet to even run a prototype of the program on an IBM PC.[70]

In October 1983, VisiCorp announced that it planned to begin shipping VisiOn.[71] Within two weeks, Microsoft made what was at that time the most elaborate product introduction in industry history for Windows and Gates, boldly predicting that Windows would be on 90% of all IBM compatible computers by the end of 1984.[72] According to Erickson and Wallace, Gates's motives behind the vaporware preannouncement were anticompetitive:

> [Gates] had learned that one way to prevent potential customers from flocking to a competitor's product was to announce that your company was working on something even better. It was a tried-and-true IBM gambit that worked well when customers looked to your firm to set standards; they usually would gladly wait for the market leader's product to come out.
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> . . . .
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> "There seemed to be this notion that since all of our competitors were announcing products that were vaporware, we had to have one too," recalled one Microsoft manager of the decision to announce Windows.
>
> Gates had other motives as well. He knew the still-secret Macintosh with its graphical user interface and mouse was going to shake up the industry when it was released early in 1984, and by announcing Windows

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[69] *See* MANES & ANDREWS, *supra* note 14, at 211 (quoting Microsoft employee Scott Oki as saying, "The number of undeliverables to Japanese customers in the early days—I mean, boy, that's a real long list. The number of missed product dates: It's incredible. We missed everything.").

[70] *See* WALLACE & ERICKSON, *supra* note 14, at 251–52. For a similar version of the same story, see generally MANES & ANDREWS, *supra* note 14, at 219–21, 226.

[71] *See* WALLACE & ERICKSON, *supra* note 14, at 256.

[72] *See id.* at 258.

> now Microsoft could make a preemptive strike . . . . The announcement would also help to neutralize not just competing software publishers but also IBM [which had recently decided to proceed with its own GUI].[73]

Key Microsoft employee Scott McGregor has been quoted as saying that Microsoft "basically announced the product when we hadn't even designed it yet."[74] Furthermore, despite repeated promises to vendors, suppliers, and customers, Microsoft continued to miss numerous predicted release dates in 1984 and 1985. During this time, the vaporware version of Windows was competing with "every other windowing product on the PC-compatible market . . . , damaging potential competitors from VisiOn to GEM."[75] Not until November 21, 1985, after more than two years of "overblown promises," was Windows officially released.[76]

Microsoft's repeated inaccurate preannouncements of Windows are widely given credit for popularizing the term "vaporware."[77] Indeed, in 1985, Bill Gates received the "Golden Vaporware Award," given in recognition of the fact that Microsoft's new Windows system had been announced two years earlier and still was not ready to ship.[78] When asked in 1984 if Microsoft's software is almost always completed later than the promised date, the product marketing manager for Windows answered: "I hate to say yes, but yes."[79]

The first commercial iteration of Windows was perceived as slow, and Microsoft's "GUI" technology[80] did not start to truly realize earlier promises until the 1987 introduction of Windows 2.0.[81] Not until the 1990 introduction of Windows 3.0 did Microsoft have a runaway commercial success on its hands.[82]

• In early 1984, Microsoft's internal price lists described a multitasking DOS product, DOS 4.0, but the product did not appear until

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[73] *Id.* at 257.

[74] MANES & ANDREWS, *supra* note 14, at 241.

[75] *Id.* at 421.

[76] *See* WALLACE & ERICKSON, *supra* note 14, at 313.

[77] *See* MANES & ANDREWS, *supra* note 14, at 7, 274.

[78] *See Vaporware Wins No Laughs at Microsoft Now*, *supra* note 29, at 1.

[79] Tom Shea, *Developers Unveil "Vaporware,"* INFOWORLD, May 7, 1986, at 48 (Microsoft product manager for Windows, Leo Nikora, went on to argue that "[y]ou're talking about the toughest part of software engineering.").

[80] The term "GUI" stands for graphical user interface. This system was initially developed by Apple Computer, but Bill Gates quickly recognized its value.

[81] *See* Nicolas P. Terry, *GUI Wars: The Windows Litigation and the Continuing Decline of "Look and Feel,"* 47 ARK. L. REV. 93, 100 (1994).

[82] *See* WALLACE & ERICKSON, *supra* note 14, at 314.

late 1986. In the interim, the vaporware version competed directly against products that competitors had in the market that Microsoft wanted to enter.[83]

• In the hearing Judge Sporkin held on the consent decree, there was evidence that in November of 1986 Microsoft had preannounced Quick Basic 3.0 in order to "hold off Turbo buyers"—buyers of Borland Corporation's Turbo Basic software.[84] In the hearing, Judge Sporkin referred to an internal Microsoft document that appeared to indicate that a Microsoft employee was praised for issuing the vaporware preannouncement.[85] Judge Sporkin characterized the document as a "smoking gun" that contradicted Microsoft's assertions that it did not use vaporware announcements in an anticompetitive manner.[86]

• In 1989, Microsoft sent a "tornado" ripping through the industry by announcing that it had joined with Apple Computer to develop the first challenger to Adobe Systems, Inc.'s popular Postscript page description language. A year later, Microsoft announced that the promised product might be yet another year off.[87]

• In early 1990, DR-DOS, an operating systems software product of DRI, which was soon purchased by Novell (and therefore DR-DOS is also called "Novell DOS"), surpassed MS-DOS in retail sales and was the clear winner in a customer satisfaction poll later published in *PC Magazine*. However, in less than a year, DR-DOS was a "dead duck" due to several Microsoft competitive attacks upon it, including vaporware preannouncements of an upgrade to MS-DOS.[88] Announcement of the upgrade flattened sales of DR-DOS, yet the upgrade did not appear on the market until more than a year after DR-DOS's release and more than six months after the upgrade's promised release date. Although Microsoft's press releases claimed that its new upgrade would contain nearly all of the innovative features of DR-DOS, many of them were curiously absent when

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[83] *See* MANES & ANDREWS, *supra* note 14, at 421.

[84] *See* Edmund L. Andrews, *Microsoft Settlement Challenged*, N.Y. TIMES, Jan. 21, 1995, at 37, 46. The evidence came from Microsoft internal memos. *Id.*

[85] *See* United States v. Microsoft Corp., 159 F.R.D. 318, 335 (D.D.C. 1995), *rev'd per curiam*, 56 F.3d 1448 (D.C. Cir. 1995). *See generally* MANES & ANDREWS, *supra* note 14, at 327–28 (discussing Microsoft's response to Borland).

[86] O. Casey Corr, *How Things Went Bad for Microsoft*, SEATTLE TIMES, Feb. 19, 1995, at J1.

[87] James Daly, *Postscript Challenger Fades: Microsoft's Page Description Language Not Expected Until Mid-1991*, COMPUTERWORLD, Oct. 15, 1990, at 48.

[88] *See* Paul M. Sherer, *Microsoft Outlines DOS 5.0 to Ward Off DR-DOS*, PC WK., Oct. 22, 1990, at 4.

the product was finally released.[89] DR-DOS has now been withdrawn from the market by Novell.[90]

• In 1993, Microsoft launched its Windows NT operating system for computer networks. The system was shipped more than six months late without many promised key applications,[91] and it used up twice the memory as had been originally represented.[92]

• In early 1994, it appeared that Lotus Development Corp. was close to establishing a dominant position in the groupware market. This turn of events made Microsoft investors jittery, but Bill Gates responded in a speech to the Electronic Messaging Association by outlining plans to market a new client-server system before the end of 1994. The system was being developed under a program, code-named "Touchdown," designed to surpass the capability of the Lotus system, which also was not yet completely developed. "At this point it's sort of dueling vaporware," noted one expert.[93]

• Windows 95 ("Chicago"), Microsoft's next generation operating system, was first announced in early 1994, with an expected delivery date of late that year. Some commentators predicted that the system was mere vaporware being announced for the purpose of "sandbagging the competition."[94] When Microsoft announced its first six-month delay in Windows 95's shipping date, the entire hardware and software industry suffered an unexpected slump,[95] indicating that Microsoft had successfully "frozen the market" by its preannouncement.[96] The product was finally released on August 24, 1995 and differed in several particulars from what had been earlier promised.[97]

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[89] *See* Kenneth C. Baseman et al., *Microsoft Plays Hardball: The Use of Exclusionary Pricing and Technical Incompatibility to Maintain Monopoly Power in Markets for Operating Systems Software*, 40 ANTITRUST BULL. 265, 272 (1995). For a lengthy discussion of the demise of DR-DOS, see Taylor, *supra* note 15, at 72.

[90] *See* Lopatka & Page, *Microsoft*, *supra* note 7, at 348.

[91] *See* Richard Morochove, *Lies My Computer Maker Told Me*, TORONTO STAR, May 12, 1994, at G2.

[92] *See* MANES & ANDREWS, *supra* note 14, at 461.

[93] Martin Wolk, *Microsoft to Outline Messaging Strategy*, REUTERS FIN. SERVICE, Apr. 19, 1994 (quoting Jess Berst, executive editor of *Windows Watcher*, an industry newsletter).

[94] Morochove, *supra* note 91, at G2.

[95] *See* Jeff Rose, *What's on the Table When Shark Is Finished Dining?*, SAN DIEGO UNION-TRIB., Nov. 8, 1994, Computer Link, at 3.

[96] *See* Charles Bruno, *Playing Fair*, NETWORK WORLD, July 25, 1994, at 44.

[97] *See* Jason Aycock, *Windows Development Saga: That Was Then, This Is 95*, AUSTIN AM.-STATESMAN, Aug. 19, 1995, at D6 (explaining differences between vaporware

• In mid-1994, Compaq and Microsoft worked together to tout the benefits of Plug and Play, a feature to be available on the Windows 95 operating system. In the words of one observer, Microsoft had induced a major computer maker to aid it in promoting a vaporware operating system.[98]

• By preannouncing software that would supposedly be packaged with operating systems that had not yet been released, Microsoft was arguably able to discourage software purchasers from buying competitors' products even in markets in which Microsoft did not yet compete.[99]

• Microsoft's Exchange Server, preannounced to counter Lotus Development Corp.'s popular Notes program, lagged more than a year past its promised shipping date.[100]

• An upgrade to Microsoft's NT operating system for business computers, called Cairo when Bill Gates announced it in 1992, was originally promised for 1994. At this writing, Microsoft expects to ship it sometime in 1997.[101]

• Microsoft's belated jump onto the Internet bandwagon was accompanied in 1996 by announcements of many vaporous products.[102]

• Microsoft's vaporous Blackbird software "vanished like a puff of smoke" after it allegedly served its purpose of preventing "investors, the media and users from declaring Java the standard for software of its kind."[103]

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promises and final product); Stephen H. Wildstrom, *What Windows 95 Left Out*, BUS. WK., May 29, 1995, at 11 (same).

[98] According to one computer expert, "[c]onvincing a major computer producer to promote features in a vaporware operating system takes style. Microsoft's side benefit is that such deals prevent its new partners from joining the ever-popular Microsoft-bashing refrain echoing around the industry." John Blackford, *Microsoft Uber Alles? Software Titan's Marketing Savvy Overcomes Its Childish Posture*, COMPUTER SHOPPER, July 1994, at 62.

[99] *See* Hanna, *supra* note 7, at 440.

[100] *See* Don Clark, *Microsoft's Windows 95 Is Just a Sideshow*, WALL ST. J., Aug. 24, 1995, at B8.

[101] *See* Amy Cortese, *Windows 95*, BUS. WK., July 10, 1995, at 94, 104.

[102] *See* Thomas Mace & Neil J. Rubenking, *Inside the ActiveX Platform*, PC MAGAZINE, Sept. 24, 1996, at 207 ("Microsoft got Web religion late in the game, and it heralded its conversion with a barrage of vaporware announcements."); Dan Miller, *Netting Microsoft*, PC WORLD, Feb. 1996, at 45, 45 ("These technologies [announced by Microsoft] aren't new, and many of the announced products are still vaporware.").

[103] Dave McCombs, *The Emperor's New Software*, DAILY YOMIURI, Apr. 8, 1996, at 15.

E. *Summary*

No trial has taken place. Allegations by Microsoft's competitors and Bill Gates's biographers have not been put to the test. Nor has Microsoft been given a chance to defend itself and its business practices in an actual trial where factual issues were at stake. Even with that point being made and firmly kept in mind, it is still clear that there is substantial evidence to support Judge Sporkin's musings about the use of vaporware in high-tech marketing.

The framers of the Sherman Act did not wish to condemn someone "who merely by superior skill and intelligence . . . got the whole business because nobody could do it as well as he could."[104] Yet, Microsoft has succeeded in numerous markets, despite not always having the best product. Moreover, many observers believe that because of Microsoft's dominant position, consumers often choose its products over technically superior competing products.[105] For example, despite the fact that "many experts argue that Apple's Macintosh operating system is easier to use, even superior to Microsoft's,"[106] Microsoft's operating system runs 80% to 85% of the world's computers, while Apple's operating system runs less than 10%. Despite the fact that many experts believe that DR-DOS is a better operating system than any pre-Windows 95 systems supplied by Microsoft,[107] it was a nonfactor in the commercial world before the Government-Microsoft antitrust settlement accord and was not revived by that accord. IBM's OS/2 operating system is also widely viewed by experts

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[104] 21 CONG. REC. 3151-53 (1890), *quoted in* HERBERT HOVENKAMP, FEDERAL ANTITRUST POLICY § 6.3, at 246 (1994).

[105] *See* Kathy Rebello et al., *Is Microsoft Too Powerful?*, BUS. WK., Mar. 1, 1993, at 82, 87 (quoting Borland, Inc.'s CEO Philippe Kahn as complaining that customers in the future will choose software packages not on the basis of quality but on the basis of whether they carry the Microsoft logo).

[106] Steve Lohr, *Ground Rules for the Great Global Connection*, N.Y. TIMES, May 7, 1995, at E1; *see also* Walter S. Mossberg, *Windows 95 Offers Big Improvements: It's More Like a Mac*, WALL ST. J., Aug. 3, 1995, at B1 (reporting that Windows 95's best new features are lifted from 10-year-old Macintosh and from OS/2); Phillip Robinson, *Window Pains*, AUSTIN AM.-STATESMAN, Aug. 20, 1995, at H1 (comparing Windows 95 to Apple's Macintosh system and IBM's OS/2 and finding that too many of the improvements of Windows 95 over Windows 3.1 "aren't a big deal, aren't complete, or just cost . . . too much").

[107] *See* JONATHAN BAND & MASANOBU KATOH, INTERFACES ON TRIAL: INTELLECTUAL PROPERTY AND INTEROPERABILITY IN THE GLOBAL SOFTWARE INDUSTRY 9 (1995).

as superior to any of Microsoft's pre-Windows 95 systems,[108] yet IBM, it appears, is about ready to concede defeat in most markets.[109]

Of the numerous incidents of Microsoft vaporware outlined above, some no doubt were caused in part, perhaps in large part, by Microsoft's officials simply being overly optimistic and underestimating programming difficulties that would be encountered. However, there is also evidence from which Judge Sporkin apparently concluded that at times Microsoft has deliberately used vaporware marketing tactics to deflect consumers away from competitors' products, even when Microsoft's own products had no hope of being on the market by the time promised by Microsoft. In recent years, Microsoft has "manifest[ed] an almost enchanted inability to meet its ship dates."[110] Some of Microsoft's strongest defenders admit that Microsoft engages in vaporware marketing, but simply rationalize that its competitors do also.[111]

At the same time, virtually no one in the computer industry would want Microsoft to wait to announce its products on the day they are ready to ship.[112] Customers, suppliers, and software developers, among others, want to know what a dominant company like Microsoft is doing and where it is going. In a "white paper" on vaporware that Microsoft circulated in response to Judge Sporkin's ruling, Microsoft argued: "The widespread, market-driven practice the industry has been discussing is not in fact vaporware, but predisclosure. Its purpose is to engage customers and the industry in a useful dialogue about products that help customers make better decisions and developers make better products."[113]

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[108] *See* Lori Hawkins, *Will OS/2 Wither in Windows' Heat?*, AUSTIN AM.-STATESMAN, Aug. 14, 1995, at D1 ("OS/2 has always been considered to be technologically superior, and even its strongest critics concede it has the edge on Windows 95."); Laurence Zuckerman, *Head of IBM Says Company Has Lost Desktop Battle*, AUSTIN AM.-STATESMAN, Aug. 1, 1995, at F1 (reporting that IBM's operating system OS/2 never "caught on" although many analysts say that it is superior to either Windows 95 or previous versions of Windows).

[109] *See* Zuckerman, *supra* note 108, at F1.

[110] MANES & ANDREWS, *supra* note 14, at 461.

[111] *See, e.g.*, Paul Somerson, *Spork You*, PC-COMPUTING, May 1995, at 51, 51 ("OK, [Microsoft]'s guilty of vaporware. So is half the industry.").

[112] *See* Dean Takahashi, *Computer Giants Slowly Unveil New Technologies*, AUSTIN AM.-STATESMAN, Mar. 11, 1996, at C1 ("Software and hardware companies . . . are screaming for [Microsoft and Intel] to take it all off [*i.e.*, reveal standards and technologies they have created for new multimedia personal computers] so they can create new, faster multimedia software based on what the two giants have created.").

[113] Flynn, *supra* note 33, at D4 (quoting Microsoft's white paper).

Everyone wants that type of information to continue to be disclosed. But evidence indicates that many companies, including Microsoft, have often used vaporware in its negative sense. They were not engaging customers in a useful dialogue. They were deceiving customers in order to hurt their competitors. The difficult questions are (a) can "bad" vaporware violate the antitrust laws, (b) can "innocent" vaporware violate the antitrust laws, and (c) can juries distinguish factually between the two?

III. MONOPOLIZATION AND ATTEMPTS TO MONOPOLIZE UNDER THE SHERMAN ACT

This Article cannot address the entire cornucopia of antitrust issues raised by the combination of Microsoft's dominant market position, ambitious marketing goals, and aggressive marketing philosophy. Instead, this Article is concerned with one limited question: Should vaporware announcements, especially when made by a company with Microsoft's market power, be deemed to violate the proscriptions of section 2 of the Sherman Act against monopolization and attempted monopolization?[114] The discussion in this Part quickly summarizes the basic legal standards for determining whether such violations have occurred.

A. *Elements of a Section 2 Monopolization Violation*

The Supreme Court construes section 2's offense of monopolization as consisting of two elements: "(1) the possession of monopoly power in the relevant market and (2) the willful acquisition and maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident."[115]

The Court has provided further guidance by defining "monopoly power" as "the power to control prices or exclude competition" within a

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[114] Section 2 of the Sherman Act also prohibits conspiracies to monopolize, but there is little evidence that Microsoft—generally a lone wolf in a highly competitive world—has conspired with other companies to monopolize. Nor is there any evidence that vaporware marketing practices have been used by any companies as part of a conspiracy to monopolize. Therefore, this Article does not address conspiracy to monopolize.

Nor, of course, does it address collusion, which is the essence of section 1 of the Sherman Act, notwithstanding the fact that "[m]odern antitrust law . . . is concerned primarily with the problem of collusion." Douglas H. Ginsburg, *Nonprice Competition*, 38 ANTITRUST BULL. 83, 84 (1993). In other words, anticompetitive activity by single firms has been given relatively short shrift by both courts and academics in recent years.

[115] United States v. Grinnell Corp., 384 U.S. 563, 570–71 (1966).

relevant market.[116] In order to measure this power in a given case, the relevant market must first be isolated.[117]

Although consideration of defendant's market share must be supplemented by analysis of many other factors that can bear upon a firm's power in a relevant market,[118] as a crude rule of thumb, market shares of 70% to 100%—percentages that Microsoft enjoys in some of its markets (most importantly, the worldwide market for operating systems)—typically indicate the existence of market power.[119] Thus, in a future section 2 claim brought against Microsoft, this element might well be established.

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[116] Eastman Kodak Co. v. Image Technical Servs., Inc., 504 U.S. 451, 481 (1992) (quoting United States v. E.I. Du Pont De Nemours & Co., 351 U.S. 377, 391 (1956)).

Hovenkamp has criticized this definition, suggesting that market power be defined, instead, as "the ability of a firm to increase its profits by reducing output and charging more than a competitive price for its product." HOVENKAMP, *supra* note 104, § 3.1, at 79. "Monopoly power," according to Hovenkamp, is a high degree of market power. *See id.*

[117] The relevant market is generally defined as the "area of effective competition." *See* Tampa Elec. Co. v. Nashville Coal Co., 365 U.S. 320, 327–28 (1961) (quoting Standard Oil Co. v. United States, 337 U.S. 293, 299 n.5 (1949)). It is deemed to consist of two components—(1) relevant product market, and (2) relevant geographic market. *See* National Reporting Co. v. Alderson Reporting Co., 763 F.2d 1020, 1022 (8th Cir. 1985); United States v. Aluminum Co. of Am., 148 F.2d 416, 426 (2d Cir. 1945).

The relevant product market includes those products that are "reasonably interchangeable" with the product allegedly monopolized. *See Grinnell Corp.*, 384 U.S. at 571. The relevant geographic market is the geographic area in which the firms selling the relevant products compete for customers. *See* Brown Shoe Co. v. United States, 370 U.S. 294, 336–37 (1962).

[118] *See* Mark E. Roszkowski & Ralph Brubaker, *Attempted Monopolization: Reuniting a Doctrine Divorced from Its Criminal Law Roots and the Policy of the Sherman Act*, 73 MARQ. L. REV. 355, 359 (1990). These other factors include barriers to entry, number and size of other competitors, and degree of competition in the market. *See id.*; *cf.* 1992 Horizontal Merger Guidelines, 57 Fed. Reg. 41,552 (1992); 4 Trade Reg. Rep. (CCH) ¶ 13,104.

[119] *See* HOVENKAMP, *supra* note 104, § 6.2a, at 244–45. Judge Learned Hand's 1945 observation in *United States v. Aluminum Co. of America*, 148 F.2d 416, 424 (2d Cir. 1945), that a 90% share of a market was "enough" to establish market power, but 60% to 64% was doubtful, retains substantial currency. *See, e.g.*, Blue Cross & Blue Shield United v. Marshfield Clinic, 65 F.3d 1406, 1411 (7th Cir. 1995) ("Fifty percent is below any accepted benchmark for inferring monopoly power from market share.").

Nonetheless, monopoly power has been found in some cases involving even lower percentages of market share. *See, e.g.*, Reazin v. Blue Cross & Blue Shield, 899 F.2d 951 (10th Cir. 1990) (47% to 62%); Broadway Delivery Corp. v. United Parcel Serv., 651 F.2d 122 (2d Cir. 1981) (50%). Microsoft is certainly "within striking distance of commercial dominance" in many applications software markets, supplementing its

Because it is illegal neither to enjoy a monopoly nor to achieve one through superior products, business acumen, or historic accident (all three of which Microsoft has enjoyed in full measure), the offense of monopolization requires that the alleged wrongdoer have willfully engaged in conduct that helped the monopolist to acquire or maintain monopoly power, and which goes beyond simply winning the competitive struggle "fair and square."[120] That is to say, monopolization requires conduct that is *anticompetitive or exclusionary*.[121]

The focus of this Article is upon this conduct element. The fact that the conduct must be "willful" gives rise to an implicit intent element—the intent to maintain monopoly power by anticompetitive means.[122]

B. *Elements of a Section 2 Attempt to Monopolize Violation*

According to the Supreme Court, an attempted monopolization violation occurs when "(1) . . . the defendant has engaged in *predatory or anticompetitive* conduct with (2) a specific intent to monopolize and (3) a dangerous probability of achieving monopoly power."[123]

To briefly address these elements in reverse order, courts must consider both the relevant market and the defendant's ability to lessen or destroy competition in that market in order to assess the existence of a "dangerous probability of achieving monopoly power."[124] Assuming

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overwhelming dominance of the operating systems market. Jay Dratler, Jr., *Microsoft As an Antitrust Target: IBM in Software?*, 25 SW. U.L. REV. 671, 675 (1996).

[120] The *willful* maintenance requirement clearly creates an intent element to the offense of monopolization.

[121] Importantly, some conduct that might be considered harmless if done by a small company can be illegal when done by a monopolist "because it tends to destroy competition." *See* Berkey Photo, Inc. v. Eastman Kodak Co., 603 F.2d 263, 275 (2d Cir. 1979).

[122] *See* Illinois ex rel. Burris v. Panhandle E. Pipe Line Co., 935 F.2d 1469, 1481 (7th Cir. 1991).

[123] Spectrum Sports, Inc. v. McQuillan, 506 U.S. 447, 456 (1993) (emphasis added). Additionally, if a private suit for damages is brought, plaintiff must show a particular injury caused by defendant's attempt to monopolize. *See* Multiflex, Inc. v. Samuel Moore & Co., 709 F.2d 980, 990 (5th Cir. 1983).

[124] *See Spectrum Sports, Inc.*, 506 U.S. at 456. Although many argued that requiring a section 2 plaintiff to show a "dangerous probability of success" would create a huge gap in Sherman Act coverage by "allow[ing] scrutiny of single-firm anticompetitive conduct only if the defendant possesses market power dangerously close to monopoly," Roszkowski & Brubaker, *supra* note 118, at 395, in *Spectrum Sports, Inc.* the Supreme Court opted for a restrictive view of the section 2 attempt cause of action.

Microsoft's alleged ability to dominate markets[125] and destroy competitors,[126] it is certainly plausible that this element of an attempt to monopolize claim might well be established should a full trial be held in a given case.

While monopolization requires only the *general* intent to do the acts that constitute the offense, attempt to monopolize requires *specific* intent both to do the prohibited acts and to achieve the prohibited result of monopolization.[127] That specific intent must include more than the intent of any reasonable business to prevail over its rivals.[128]

Again, given Microsoft's track record of establishing monopoly and near-monopoly positions in numerous markets, as well as the public statements of its officers that it aims to seize 100% of the markets it enters,[129] it is certainly reasonable to assume that this element of the attempt to monopolize offense might also be established factually in some

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[125] Market shares of 40% to 60% prior to commencement of the anticompetitive or competitive acts have generally been required to indicate a dangerous probability of success in attempt to monopolize cases. *Compare* Lektro-Vend Corp. v. Vendo Co., 660 F.2d 255, 271 (7th Cir. 1981) (30% is generally inadequate) *with* Kellam Energy, Inc. v. Duncan, 668 F. Supp. 861, 890–91 (D. Del. 1987) (43% to 50% may be sufficient).

However, Hovenkamp has pointed out that many types of anticompetitive conduct can advance an attempt to monopolize even where the wrongdoer lacks substantial market power. As an extreme example, a small competitor could attempt to dynamite the plants of all other competitors in its market. *See* HOVENKAMP, *supra* note 104, § 6.5b2, at 256.

[126] *See supra* note 14.

[127] *See* Times Picayune Publ'g Co. v. United States, 345 U.S. 594, 626 (1953).

[128] *See* AREEDA & TURNER, *supra* note 7, ¶ 822a.

[129] *See supra* note 15. Most courts are reluctant to accord much significance to the rhetorical flourishes of the employees of an alleged predator. *See, e.g.*, Dahl, Inc. v. Roy Cooper Co., 448 F.2d 17, 19 (9th Cir. 1971) (holding that allegation that one of defendant's employees told one of plaintiff's employees that defendant would drive plaintiff out of business if plaintiff chose to compete "in the absence of evidence of unfair, anticompetitive or predatory conduct is not enough to establish a violation of § 2"); Scott Publ'g Co. v. Columbia Basin Publ'g, Inc., 293 F.2d 15, 21 (9th Cir. 1961) (holding defendant's CEO's statement that he would drive plaintiff "to the wall" as insufficient evidence of specific intent); *see also* HOVENKAMP, *supra* note 104, § 6.5a, at 251 ("Memoranda are written by careless people, and they often contain puffing about competitive prowess that far exceeds a firm's actual planning and policy."); J. Thomas Rosch, *Future FTC Enforcement of Section 2*, 59 ANTITRUST L.J. 543, 544 (1991) ("[L]ocker room language is frequently misleading as an indication of whether or not a firm is engaging in hard competition or predatory conduct.").

future litigation against Microsoft.[130] And, given (a) Microsoft's penchant for entering new markets and making enemies and (b) the evidence noted earlier that Microsoft has been the target of vaporware marketing, it might have an opportunity as a *plaintiff* in some future litigation to establish this element against its competitors.

Implicit in both the monopolizing and attempting to monopolize offenses is the requirement of causation—that there be some evidence that the illicit conduct actually assists substantially in the maintenance or acquisition of monopoly power.[131]

Intent to monopolize is not a violation of the Sherman Act absent conduct taken to advance that intent.[132] For purposes of this Article, the important feature of an attempted monopoly claim is the requirement of "predatory, exclusionary, or anticompetitive" conduct.[133] Parts IV and V analyze this element.

IV. FRAUDULENT VAPORWARE MARKETING AS ANTICOMPETITIVE, EXCLUSIONARY, OR PREDATORY CONDUCT

In the first three parts of this Article, no scrupulous distinction was drawn between fraudulent vaporware marketing (where companies announce product release deadlines and features that they know they cannot and will not meet) and innocent vaporware marketing (where companies announce product release deadlines and features in good faith, but

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[130] This analysis is tricky business, of course, for one must be careful not to punish a mere "intent to compete vigorously." Spectrum Sports, Inc. v. McQuillan, 506 U.S. 447, 459 (1993).

[131] *See* AREEDA & TURNER, *supra* note 7, ¶ 626c, at 78–79; *see, e.g.*, International Travel Arrangers, Inc. v. Western Airlines, Inc., 623 F.2d 1255, 1270 (8th Cir. 1980) (holding that causal antitrust injury is an element of a section 2 violation); Van Dyk Research Corp. v. Xerox Corp., 631 F.2d 251, 255 (3d Cir. 1980) (holding that section 2 plaintiff must show that alleged antitrust violation was a material cause of its injury).

[132] *See, e.g.*, Conoco, Inc. v. Inman Oil Co., 774 F.2d 895, 905 n.6 (8th Cir. 1985) ("Evidence of intent alone can be ambiguous and misleading.").

[133] The Supreme Court stressed in *Spectrum Sports, Inc.*, 506 U.S. at 459, that the requirement of a "dangerous probability of monopolization" served to distinguish mere vigorous competition from an attempt to monopolize. The requirement of predatory or anticompetitive conduct serves the same purpose. The desire and intent to squash one's competitors like bugs are natural in a free enterprise economy and do not implicate the antitrust laws until they are acted upon by use of unreasonably anticompetitive means. *See* Ocean State Physicians Health Plan, Inc. v. Blue Cross & Blue Shield, 883 F.2d 1101, 1109–13 (1st Cir. 1989); A.A. Poultry Farms, Inc. v. Rose Acre Farms, Inc., 881 F.2d 1396, 1404 (7th Cir. 1989).

ultimately fail to meet their announced goals). Now it is time to make that distinction and to separately analyze each form of vaporware marketing. This Part analyzes fraudulent vaporware marketing, taking as its starting point the following scenario.

Scenario #1: Fraudulent Vaporware Marketing

Assume that a computer software maker has monopoly in a relevant market. Assume further that a small competitor in that market, say with a five percent market share, begins to market a new product with features well beyond those of the dominant firm's current product. Assume also that the dominant firm immediately issues a press release and announces at a computer trade show that it is currently developing and will market within three months a product that will do everything that the small competitor's product will do. Assume, finally, that the press release is entirely false and issued in bad faith. The dominant firm has no such product in production. It hopes to reverse engineer or in some other fashion to match the small competitor's product, but it has no realistic hope of being able to do so in less than a year.

Should the fraudulent vaporware marketing practice described in this hypothetical example be deemed to fulfill the conduct element of a monopolization or attempt to monopolize offense?

A. *Evolution of Nonprice Predation Theory*

1. *The Chicago School's Ascendancy*

After the heyday of activist antitrust law in the 1960s and 1970s, Chicago School economic analysis had a profound (and generally beneficial) restrictive effect upon the entire antitrust body of law. That point of view is very suspicious of antitrust enforcement in all of its particulars.[134] Take, for example, the concept of predatory pricing.

Predatory pricing is one of the most examined acts of monopolizing conduct, yet its very existence remains in dispute. Chicago School economists doubt that there are very many situations in which a would-be monopolist could recoup in the long run what is lost in the short run by

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[134] *See* Easterbrook, *Ignorance and Antitrust*, *supra* note 13, at 119 ("The hallmark of the Chicago approach to antitrust is skepticism.").

predatory pricing,[135] and the Supreme Court appears to have been won over to that point of view.[136]

2. *The Post-Chicago School Era*

The Supreme Court's acceptance of Chicago School reasoning regarding predatory pricing notwithstanding,[137] some recent studies do indicate that recoupment of losses caused by predatory underpricing is possible in some circumstances, making this a potentially rational predatory activity.[138]

More importantly, the post-Chicago School trend is toward a conclusion that predatory activities, in general, are more widespread than Chicago School economists have conceded.[139] For example, it has been

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[135] *See, e.g.*, ROBERT H. BORK, THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF 144–60 (1978); RICHARD A. POSNER, ANTITRUST LAW: AN ECONOMIC PERSPECTIVE 92–93 (1976); GEORGE J. STIGLER, THE ORGANIZATION OF INDUSTRY 113–18 (1968); Phillip Areeda & Donald F. Turner, *Predatory Pricing and Related Practices Under Section 2 of the Sherman Act*, 88 HARV. L. REV. 697 (1975); John E. Lopatka & Andre N. Kleit, *The Mystery of Lorain Journal and the Quest for Foreclosure in Antitrust Law*, 73 TEX. L. REV. 1255 (1995); John McGee, *Predatory Pricing Revisited*, 23 J.L. & ECON. 289 (1980).

[136] *See, e.g.*, Brook Group, Ltd. v. Brown & Williamson, 113 S. Ct. 2578, 2590 (1993) (noting "general implausibility of predatory pricing"); Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 589 (1986) ("[T]here is a consensus among commentators that predatory pricing schemes are rarely tried, and even more rarely successful.").

[137] The Court certainly has not accepted all Chicago School views on antitrust law. For example, the decision in *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585 (1985), that a monopolist's refusal to do business with a competitor constituted a violation of section 2 of the Sherman Act is scarcely consonant with Chicago School principles.

[138] *See* Walter Adams & James W. Brock, *Predation, "Rationality," and Judicial Somnambulance*, 4 U. CIN. L. REV. 811, 816–24 (1996) [hereinafter Adams & Brock, *Somnambulance*] (giving details of several examples of successful price predation in tobacco industry alone); Jonathan B. Baker, *Recent Developments in Economics that Challenge Chicago School Views*, 58 ANTITRUST L.J. 645, 649 (1989) (citing studies); Malcolm R. Burns, *Predatory Pricing and the Acquisition Cost of Competitors*, 94 J. POL. ECON. 266 (1986) (empirical study of tobacco industry); Thomas Campbell, *Predation and Competition in Antitrust: The Case of Nonfungible Goods*, 87 COLUM. L. REV. 1625, 1648 (1987).

[139] *See, e.g.*, ABA ANTITRUST SECTION: MONOGRAPH NO. 18, NONPRICE PREDATION UNDER SECTION 2 OF THE SHERMAN ACT (1991) [hereinafter ABA, NONPRICE PREDATION]; Joseph F. Brodley, *Antitrust Standing in Private Merger Cases: Reconciling Private Incentives and Public Enforcement Goals*, 94 MICH. L. REV. 1, 53–55 (1995); Campbell, *supra* note 138 (showing how an established firm may use predatory pricing to force an

plausibly, but controversially, argued that what appear to be legitimate, competitive decisions regarding strategic investment,[140] research and development,[141] product differentiation,[142] product innovation,[143] and

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equally efficient competitor out of the market); William S. Comanor & H.E. Frech III, *Predatory Pricing and the Meaning of Intent*, 38 ANTITRUST BULL. 293 (1993); Drew Fudenberg & Jean Tirole, *A Sign-Jamming Theory of Predation*, 17 RAND J. ECON. 366 (1986); David Harbord & Tom Hoehn, *Barriers to Entry and Exit in European Competition Policy*, 14 INT'L REV. L. & ECON. 411, 420 (1994) ("[T]he presumption that predation is not a rational strategy has been shown to be false in the recent literature, at least if one believes that the sorts of informational asymmetries modeled there are present in real markets."); Paul L. Joskow & Alvin K. Klevorick, *A Framework for Analyzing Predatory Pricing Policy*, 89 YALE L.J. 213 (1979); F.M. Scherer, *Predatory Pricing and the Sherman Act: A Comment*, 89 HARV. L. REV. 869 (1976); Oliver Williamson, *Predatory Pricing: A Strategic and Welfare Analysis*, 87 YALE L.J. 213 (1977). *See generally* OLIVER WILLIAMSON, ANTITRUST ECONOMICS: MERGERS, CONTRACTING, AND STRATEGIC BEHAVIOR 320–43 (1987) [hereinafter WILLIAMSON, ANTITRUST ECONOMICS] (describing the evolution of antitrust law through the 1960s, 1970s, and 1980s and noting "the diehard-Chicago approach to the study of strategic behavior is myopic and simplistic"); Charles A. Holt & David T. Scheffman, *Strategic Behavior and Antitrust*, *in* ECONOMICS AND ANTITRUST POLICY 39 (Robert J. Larner & James W. Meehan, Jr. eds., 1989) (analyzing with a critical eye various nonprice predatory strategies); William G. Shepherd, *Theories of Industrial Organization*, *in* REVITALIZING ANTITRUST IN ITS SECOND CENTURY 37–57 (Harry First et al. eds., 1991) [hereinafter Shepherd, *Theories*] (giving history of rise and modifications of Chicago School views of antitrust).

Despite Brodley's confident statement that "modern economic theory shows that dominant firm predation is rational and plausible; empirical evidence confirms the existence of predatory conduct, as theory predicts; and business people make decisions based on predatory strategies," Brodley, *supra*, at 55, the case for the post-Chicago school is far from airtight. *See* John E. Lopatka & William H. Page, *Posner's Program for the Antitrust Division: A Twenty-Five Year Perspective*, 48 SMU L. REV. 1713, 1730–47 (1995). Nonetheless, this Article will demonstrate that the case for post-Chicago theories is very strong and that the support for the vaporware theory advanced in this Article is stronger than that supporting any other post-Chicago theory thus far advanced.

[140] *See, e.g.*, A. Michael Spence, *Investment Strategy and Growth in a New Market*, 10 BELL J. ECON. 1 (1979).

[141] *See* JOHN SUTTON, SUNK COSTS AND MARKET STRUCTURE 313 (1991).

[142] *See, e.g.*, Campbell, *supra* note 138 (building on spatial oligopoly theory); James T. Halverson, *The Relationship of Antitrust Policy and Technological Progress*, 1975 WASH. U. L.Q. 409, 419 (arguing that product modification predation can seriously threaten competition).

Campbell's work has been directly challenged. *See* Eric Rasmussen & John Shepard Wiley, Jr., *Antitrust and Spatial Predation: A Response to Thomas J. Campbell*, 89 COLUM. L. REV. 1015 (1989).

[143] *See, e.g.*, Ordover & Willig, *supra* note 7.

contracting[144] can actually be exclusionary. These and other comparable theories,[145] such as the broader category of raising rivals' costs (RRC)[146] and a subset of RRC known as vexatious litigation,[147] comprise this new body of nonprice predation theory. These theories have in common the belief that the Chicago School economic analysis fundamentally ignores strategic competitive decisions by managers.[148] Many believe that when these strategic considerations are taken into account, nonprice predation in various forms becomes not only a plausible form of competition,[149] but one that requires vigilant antitrust restraint.

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[144] *See, e.g.*, Joseph F. Brodley & Ching-to Albert Ma, *Contract Penalties, Monopolizing Strategies, and Antitrust Policies*, 45 STAN. L. REV. 1161 (1993) (discussing how exclusionary contract penalties can impede new entry and innovation, thereby severely constraining the competitive process). Brodley and Ma's theory is based substantially upon the work of economists Aghion and Bolton. *See* Philippe Aghion & Patrick Bolton, *Contracts As Barriers to Entry*, 77 AM. ECON. REV. 388 (1987).

[145] According to the ABA, specific nonprice predation strategies arguably include

> exclusive dealing contracts; exclusive licensing; exclusive dealing; tying vertical mergers; refusals to deal; filing administrative or judicial proceedings to prevent, delay, or raise the cost of a rival's entry into the market; raising the victim's administrative or production costs by securing exclusive control of needed inputs or limiting access to competitively priced inputs; product promotion; marketing programs such as calendar marketing agreements; brand proliferation; product differentiation; capacity expansion; innovation; product preemption; burning down a rival's plant; or cutting a rival's transmission lines.

ABA, NONPRICE PREDATION, *supra* note 139, at 4.

[146] *See, e.g.*, Steven C. Salop & David T. Scheffman, *Cost-Raising Strategies*, 36 J. INDUS. ECON. 19 (1987).

[147] *See generally* Gary Myers, *Litigation as a Predatory Practice*, 80 KY. L.J. 565 (1991–1992).

[148] *See* Michael O. Wise, *Antitrust's Newest 'New Learning' Returns the Law to Its Roots: Chaos and Adaptation as New Metaphors for Competitive Policy*, 40 ANTITRUST BULL. 713, 765–66 & n.91 (1995) (citing fifteen articles embodying game theory models that help to show why anticompetitive strategies dismissed by the Chicago School as "at worst foolish, and more likely efficient, could at least in theory be both individually sensible and socially destructive").

[149] The most prominent business strategist assumes the existence of predatory strategies. *See* MICHAEL E. PORTER, COMPETITIVE ADVANTAGE 582–86 (1985); *see also* Adams & Brock, *Somnambulance*, *supra* note 138, at 864) ("[E]conomists themselves are increasingly recognizing that human behavior is not universally and eternally conducted in accordance with theoretical canons of economic rationality" underlying the Chicago School models.).

Commentators have suggested a four-step analysis for determining whether particular nonprice behavior is predatory:

> (1) identification of an exclusionary device, (2) determination as to whether the exclusionary device injures competitors by materially raising their costs, (3) determination as to whether the injury to competitors has resulted in injury to competition and an increase in the market power of the predator, and (4) assessment of any overriding efficiencies identified by the putative predator as justifying its behavior.[150]

Critics of these theories of nonprice predation offer five major criticisms: (1) that the new body of nonprice predation theories do not represent a genuine departure from current analytical approaches; (2) that the theories have failed to define condemnable conduct with sufficient specificity to avoid impinging upon truly efficient conduct; (3) that many nonprice predation theories hinge on the existence of market power, which means that they will be applicable in only a limited set of circumstances; (4) that the instances of nonprice predation are so limited as to be insignificant for purposes of charting a course for competition policy; and (5) that targets of nonprice predation can defeat the attempted predation by counterstrategies without the intervention of antitrust laws.[151]

Sections IV.B and IV.C examine fraudulent vaporware marketing in light of these four suggested constructive criteria and the five criticisms in order to evaluate its viability as an addition to the body of nonprice predation theory and to answer the broader and more important question of whether it should be deemed to satisfy the conduct element of a section 2 Sherman Act violation.

B. *Analysis to Determine Whether Fraudulent Vaporware Marketing Is Predatory*

1. *Identification of an Exclusionary Device*

Fraudulent vaporware marketing is the exclusionary device examined in this Section. Its mechanisms and applications were described in detail in Part II.[152]

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[150] ABA, NONPRICE PREDATION, *supra* note 139, at 3–4.

[151] *See id.* at 33. One other criticism is mentioned in this treatise as well. It relates only to theories that "posit exclusion by means of the acquisition of supply inputs," and is therefore irrelevant to fraudulent vaporware marketing. *See id.*

[152] *See supra* notes 18–113 and accompanying text.

There is substantial anecdotal evidence that fraudulent vaporware marketing is being used as an anticompetitive tactic. Competitors in the computer industry agree that vaporware marketing occurs. Virtually all industry observers conclude that vaporware marketing is frequently used.[153] In a recent survey published in the *International Journal of Industrial Organization*, many companies admitted using vaporware marketing as a strategic competitive tool.[154] In another recent survey, 68% of information systems professionals agreed that Microsoft's vaporware announcements have an anticompetitive impact in that they freeze the market for products of its smaller competitors.[155]

Being first to the market with a product is extremely important in high-tech marketing. This type of innovation is one of the few ways that new companies can establish their products.[156] Unfortunately, powerful firms can use fraudulent vaporware marketing to defeat these innovators. For example, a competitor with substantial market share can completely neutralize the new entrant's innovation and speed advantage by simply announcing that it will soon have a competing product, even if this announcement eventually turns out to be bogus.[157]

Indeed, a large company with Microsoft's economic power can not only preserve existing domination, it can also enter a new product market via a vaporware marketing announcement. In so doing, it can severely damage or even eliminate an existing market leader when that leader is a smaller company overall.[158]

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[153] *See, e.g.*, Donath, *supra* note 59, at 13 (Companies "keep ratcheting the technology and software hyperbole to stratospheric levels where no press agentry previously dared to tread.").

[154] *See* Robert Smiley, *Empirical Evidence on Strategic Entry Deterrence*, 6 INT'L J. INDUS. ORG. 167, 175 (1988).

[155] *See* Johnston, *supra* note 62, at 1 (However, 80% of those surveyed felt that such information was useful for decision-making purposes.). *See id.*

[156] Most successful high-tech companies are first to the market with a useful, functional product that becomes the industry leader and forces competitors to imitate it. *See* MANES & ANDREWS, *supra* note 14, at 261 (stating that in the competitive world of software, the rule is "[b]e first, or play catch up").

[157] Microsoft's alleged vaporware attack on VisiCorp is an example. *See supra* notes 70–82 and accompanying text.

[158] For example, IBM's preannouncement of its disk array drive system for mainframe computers not only flattened the sales of industry leader E.M.C. Corp., it also caused a sharp drop in E.M.C.'s share price, even though IBM was still several months away from introducing its product and actually entering the market. *See* Steve Lohr, *Product Prognostication, and Then the Unveiling*, N.Y. TIMES, June 19, 1994, at F9 [hereinafter Lohr, *Product Prognostication*].

Even if the predator does not force the target from the market and thereby become the "only game in town," fraudulent vaporware marketing can have significant anticompetitive effects. Assume that the smaller competitor does not go out of business, but its product sales stall during the time that consumers are waiting for the larger competitor's vaporous product to appear. The vaporware announcement allows the larger competitor to unjustifiably capture a "mind share" of the market for its product that does not yet exist.[159] By using contracts for future delivery, the predator can build up an "installed base" for its product.[160] If that product does finally appear, so long as it carries approximately the same features as the smaller competitor's product for roughly the same price, it will likely do very well. Once the vaporware announcement has destroyed the smaller competitor's advantage of being first to the market, the larger competitor can easily grind out a market victory by exercising its marketing muscle in the form of a firmly established brand name,[161] a

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Although potential competition is generally a peripheral matter, in "[e]xceptional cases, such as a small market overshadowed by a known very large and powerful competitor," it can play a significant role. *See* Shepherd, *Theories*, *supra* note 139, at 42.

[159] A "mind share" is consumer acceptance of a product that is nonexistent or has not yet been introduced. *See* Avery Jenkins, *Long Overdue: The Reasons Behind Vaporware*, COMPUTERWORLD FOCUS, Oct. 5, 1988, at 10.

[160] *See* TIROLE, *supra* note 53, at 408.

[161] Courts are leery of assuming that goodwill raises entry barriers. *See* HOVENKAMP, *supra* note 104, § 12.4b3, at 472. However, risk-averse consumers are often reluctant to try new brands even when they are superior to brands with established reputations. *See* Howard Beales et al., *The Efficient Regulation of Consumer Information*, 24 J.L. & ECON., 491, 510 n.65 (1981). In many industries, consumers value the brand name of a product, independent of its other characteristics. *See* Campbell, *supra* note 138, at 1640. This valuation is definitely the case in the computer industry, given that Microsoft's brand name has been valued at $9.8 billion. *See Coca-Cola Tops Magazine's Rankings of Brands' Value: IBM, Hit by PC Clones, Slips to No. 290*, WASH. POST, July 12, 1994, at C4. It would seem foolish to ignore the barrier raising potential of Microsoft, IBM, Intel, and other computer powerhouses.

Goodwill in the form of consumer brand loyalty has been deemed an entry barrier in appropriate cases. *See, e.g.*, FTC v. Coca-Cola Co., 641 F. Supp. 1128, 1137 (D.D.C. 1986), *vacated mem.*, 829 F.2d 191 (D.C. Cir. 1987); Borden, Inc. v. FTC, 674 F.2d 498, 512 (6th Cir. 1982), *vacated and remanded*, 461 U.S. 940 (1983) ("When a seller possesses an overwhelmingly dominant share of the market, however, and differentiates its product from others through a recognized and extensively advertised brand name, thereby enabling the seller to control prices or unreasonably restrict competition, then monopoly power may be found to exist.").

Brand identification and loyalty can be built up by developing a track record of superior product performance, but also by heavy and effective advertising. *See* Richard

large advertising budget,[162] more and better distribution channels,[163] "bundling" of software and hardware packages,[164] and the like. The smaller company's hard-earned advantage of being first to the market is

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Schmalensee, *Entry Deterrence in the Ready-to-Eat Breakfast Cereal Industry*, 9 BELL J. ECON. 305 (1978) [hereinafter Schmalensee, *Breakfast Cereal*].

[162] Advertising is extremely important in most high-tech markets, and especially for the introduction of new computer products. *See* Prentice & Langmore, *supra* note 24, at 8–9. As Windows 95 was rolled out, it was reported that Microsoft intended to spend up to $200 million to advertise its introduction to the marketplace and that the makers of compatible products would spend another $550 million touting their connection to Windows 95. *See* Mike Langberg, *Microsoft to Unleash Hype to Open Windows 95*, AUSTIN AM.-STATESMAN, Aug. 17, 1995, at C1.

Although this area remains very controversial, *see* HOVENKAMP, *supra* note 104, § 12.4b3, at 472, there is substantial basis for the conclusion that significant advertising, especially if it has a cumulative effect over time, can raise entry barriers. *See* Hunt-Wesson Foods, Inc. v. Ragu Foods, Inc., 627 F.2d 919, 927 (9th Cir. 1980); FTC v. Coca-Cola Co., 641 F. Supp. 1128, 1137 (D.D.C. 1986), *vacated mem.*, 829 F.2d 191 (D.C. Cir. 1987); *In re* General Foods Corp., 69 F.T.C. 380, 423 (1966), *aff'd*, 386 F.2d 936, 945 (3d Cir. 1967); *In re* Procter & Gamble Co., 63 F.T.C. 1465, 1581 (1963), *aff'd*, 386 U.S. 568, 575 (1967). For discussions supporting the view that advertising can heighten brand loyalty and thereby raise entry barriers, see, for example, Joskow & Klevorick, *supra* note 139, at 229 ("[C]ourts should recognize that because generic names and premium brand images induced by advertising change the conditions of entry in such a way that potential competition is a less effective constraint on prices than it otherwise might be, dominant firm behavior in such markets may be worthy of closer scrutiny.") and F.M. SCHERER, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE 381 (2d ed. 1980) ("[A]dvertising and other forms of image differentiation can confer monopoly power upon the firms using them."). For two very informative discussions of the controversy regarding advertising's role as an entry barrier, see Elizabeth Mensch & Alan Freeman, *Efficiency and Image: Advertising as an Antitrust Issue*, 1990 DUKE L.J. 321, 341–53, and William S. Comanor & Thomas A. Wilson, *The Effect of Advertising on Competition: A Survey*, 17 J. ECON. LIT. 453, 473 (1979) ("[T]he primary conclusion to be drawn from the empirical literature is that heavy advertising does contribute to high levels of market power in some industries.").

[163] *See* Hanna, *supra* note 7, at 428 ("[A]ccess to scarce retail shelf space has been described as the real source of market power in the computer industry. . . . Thus, a single producer may be able to lock up available shelf space for a particular product niche and prevent rivals from breaking into the market.").

[164] Microsoft has allegedly perfected this technique. For example, Microsoft established MS-DOS and Windows as dominant operating systems in the PC-compatible industry in large part by offering deep discounts to computer makers who agreed to preinstall Microsoft's operating systems. *See* Julia Pitta, *Microsoft's Dark Shadow*, FORBES, Mar. 1, 1993, at 106. Once Microsoft's operating systems software became dominant, it began bundling applications software as well.

easily neutralized by the larger competitor's strategic vaporware announcements.[165]

Thus, in either maintaining a monopoly position or attempting to gain a monopoly position, large companies can and allegedly do use fraudulent vaporware marketing tactics to damage the competitive efforts of small challengers and even of established market leaders.

The worn-out joke about economists who see things occur and then wonder whether they could happen in theory seems apt at this point. The theoretical mechanism by which fraudulent vaporware marketing works needs no complicated mathematical modeling. According to two leading nonprice predation theorists, Professors Ordover and Willig, by use of fraudulent vaporware marketing, a predator can target a competitor and flatten its sales, reduce its cash flows, increase its advertising costs, and perhaps, threaten its viability and induce it to exit the market.[166]

2. *Determination As to Whether the Exclusionary Device Injured Competitors by Materially Raising Their Costs*

Because not all nonprice predations are varieties of RRC, a test that looks only at whether a suspect practice raises rivals' costs is unduly narrow. If a nonprice strategy unfairly injures competitors in a manner comparable to raising their costs, it should be equally condemnable. Fraudulent vaporware marketing has this comparable impact by curtailing rivals' sales and revenues unfairly, as explained in the previous section. As it turns out, however, it also raises rivals' costs in the form of advertising and other marketing expenses and is a very plausible form of RRC.[167]

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[165] Stiglitz has said that the first firm in an industry gains an advantage that competitors can never completely eliminate. *See* Joseph E. Stiglitz, *Technological Change, Sunk Costs, and Competition*, 3 BROOKINGS PAPERS ON ECON. ACTIVITY 883, 910 (1987) [hereinafter Stiglitz, *Technological Change*]. However, by use of a fraudulent vaporware announcement, a powerful entrant can quickly do exactly that.

[166] *See* Ordover & Willig, *supra* note 7, at 52–53 (explaining the theoretical mechanism for vaporware marketing, but ultimately rejecting its classification as a condemnable form of predation).

[167] Vaporware, unlike predatory pricing, does not require its user to make short-run sacrifices in hopes of long-term gain. It shares this advantage and others with similar RRC measures. The advantages that RRC has over other forms of exclusion have been deemed to include the following:

> First, whereas predation is successful only if the rival exits the market, raising a rival's costs is effective even if the smaller rival does not exit the market because competing against a high-cost firm is preferable to competing against a low-cost firm. Second, the

Professors Krattenmaker and Salop, among others, have argued that "raising rivals' costs sometimes can be an effective means of acquiring power over price."[168] Vaporware marketing may not be the prototypical RRC activity,[169] but it satisfies the criteria for RRC activity, especially in that it is an action taken against a competitor, rather than an exercise of market power against upstream suppliers or downstream customers. Proponents of the RRC theory have given advertising as an example of such activity,[170] and Professor Gerla has noted that "[t]he nature of human information processing makes the dissemination of false information an almost ideal strategic tool for raising rivals' costs."[171] Vaporware

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predator must sacrifice short-run profits in exchange for speculative and indeterminate long-run profits, but a cost-raiser may enjoy higher profits even in the short run. A firm whose costs have risen either reduces output or raises prices, permitting the dominant firm to raise its prices or increase its relevant market share. Third, although successful predation requires that the predator have a "deep pocket" or easy access to financing, raising rivals' costs may be relatively inexpensive for the firm engaging in this strategy.

Alon Y. Kapen, *Duty to Cooperate Under Section 2 of the Sherman Act: Aspen Skiing's Slippery Slope*, 72 CORNELL L. REV. 1047, 1068–69 n.142 (1987).

[168] Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price*, 96 YALE L.J. 209, 292 (1986). For a good summary of RRC literature, see Edward A. Snyder & Thomas E. Kauper, *Misuse of the Antitrust Laws: The Competitor Plaintiff*, 90 MICH. L. REV. 551, 561–63 (1991).

[169] Krattenmaker and Salop's focus is upon vertical integration. Their prototypical example of RRC activity is a manufacturing firm locking up a favorable arrangement with a supplier or suppliers that would place the firm's competitors at a long-term cost disadvantage. *See* Krattenmaker & Salop, *supra* note 168, at 214. Perhaps by locking up the sole source of widgets, a firm can relegate all its competitors to use of the more expensive substitute product, gidgets.

Nonetheless, other commentators have explored nonvertical forms of RRC, and numerous cases fitting the RRC mold were brought before Krattenmaker and Salop put a formal name to the practice. For example, *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492 (1988), is an RRC case in which current producers of metal electrical conduit were threatened by development of a new product, plastic electrical conduit, that would lower the demand for their output, effectively lowering the market price for their product. These current producers strangled the market for the new product by packing a meeting of the National Fire Protection Association in order to prevent passage of new rules that would allow widespread use of the new product in code-restricted buildings. Vaporware marketers allegedly accomplish the same strangulation of the market by use of false product pronouncements.

[170] *See* Salop & Scheffman, *supra* note 146, at 32.

[171] Harry S. Gerla, *Federal Antitrust Law and the Flow of Consumer Information*, 42 SYRACUSE L. REV. 1029, 1063 (1991) [hereinafter Gerla, *Federal Antitrust*].

marketing does indeed raise rivals' costs by making them spend more money on marketing and promotion than they otherwise would.[172]

There is evidence that Microsoft's vaporware announcements, whether intentional or innocent, have forced competitors to invest substantial funds to assure customers that their products would remain viable in light of a promised, but not yet existing, Microsoft challenge.[173] To a similar effect, IBM preannouncements have apparently forced competitors to cut prices in order to compete with "soon-to-be-released" products.[174]

Perhaps the most widely accepted form of nonprice predation is the use of vexatious litigation and petitioning. Although much of such activity is protected from antitrust scrutiny by the *Noerr-Pennington* doctrine[175] on First Amendment grounds, there is an exception for "sham" litigation,[176] which can fulfill the "conduct" element of a section 2 violation.

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[172] *See* MICHAEL L. ROTHSCHILD, ADVERTISING: FROM FUNDAMENTAL TO STRATEGIES 619 (1987) ("The *intensity of competition* will probably be the greatest marketplace influence on budget. More competition will mean more noise in the market and the need for a larger budget in order to be heard.") (emphasis added).

Thus, by introducing noise into the market, vaporware marketing is a classic example of RRC activity. It also has the anticompetitive effect of raising consumers' search costs. *See* Robert H. Lande, *Beyond Chicago: Will Activist Antitrust Arise Again?*, 39 ANTITRUST BULL. 1, 3 (1994) [hereinafter Lande, *Beyond Chicago*], *citing In re* Detroit Auto Dealers Ass'n, 111 F.T.C. 417 (1989), *aff'd in part and remanded*, 955 F.2d 457 (6th Cir. 1992) (by restricting hours of operation, auto dealers increased consumers' search costs).

[173] *See* Rebello et al., *supra* note 105, at 86. These announcements have also caused sharp drops in rivals' stock prices, which could raise costs of obtaining financing. *Id.*

[174] *See* GERALD BROCK, THE UNITED STATES COMPUTER INDUSTRY 170 (1975). Control Data Corporation was forced by IBM's vaporware announcement to cut prices in order to compete with a computer that was not actually marketed until three years later. *See id.*

[175] The *Noerr-Pennington* doctrine, which grants First Amendment protection from antitrust scrutiny to competitors' acts of petitioning governmental bodies and filing litigation, arose from two Supreme Court cases: *Eastern Railroad Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127, 137–38 (1961) and *United Mine Workers v. Pennington*, 381 U.S. 657, 670 (1965).

[176] The sham litigation exception to the *Noerr-Pennington* doctrine denies First Amendment protection from antitrust scrutiny for many unworthy actions that have more to do with curbing competition than communicating ideas. *See, e.g.*, California Motor Transport Co. v. Trucking Unlimited, 404 U.S. 508, 510 (1972) (perjury of witnesses); Walker Process Equip. v. Food Mach. & Chem. Corp., 382 U.S. 172, 175–77 (1965) (use of patent obtained by fraud); Continental Ore Co. v. Union Carbide & Carbon Corp., 370 U.S. 690, 707 (1962) (conspiracy with licensing authority to eliminate competitor); Rangen, Inc. v. Sterling Nelson & Sons, Inc., 351 F.2d 851, 857 (9th Cir. 1965) (bribery of a public purchasing agent).

Predatory litigation can serve several possible anticompetitive functions, including eliminating competitors, disciplining competitors, raising rivals' costs, and delaying or deterring entry into a market. When a litigant brings suit for one of these reasons, rather than to prevail in the courtroom, the suit is predatory and threatens competition. Litigation can be as effective as any other strategy of predation, and it may be less costly and harder to penalize than other forms of price or nonprice predation. In particular, a dominant firm may be able to impose asymmetrical costs on its target because litigation can be costly to defend and difficult to resolve.[177]

Like sham litigation, fraudulent vaporware marketing can also eliminate competitors,[178] raise rivals' costs,[179] delay or deter entry into a market,[180] and inflict other anticompetitive injuries. It enables a predator to

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[177] *See* Myers, *supra* note 147, at 630. For a discussion of cases illustrating these various injuries to competition caused by predatory litigation, see *id.* at 586–96.

[178] A powerful vaporware marketer can flatten out a smaller competitor's sales by promising, falsely, to quickly market a superior product. Such a marketer can also deter adoption of a smaller competitor's new product by the same means. Some customers may refrain from buying the smaller competitor's existing product, preferring to examine the predator's competing product before making a choice between the two products. Additionally, some customers may refrain from buying the smaller competitor's existing product, preferring to buy the promised product of the predator because of the predator's existing reputation or the predator's large market share, which improves the chances of compatibility with a wider range of complementary products. Finally, some customers may refrain from buying the smaller competitor's existing product on the assumption that the predator's soon-to-be-introduced product will destroy the smaller competitor. No one wants to buy a product from an innovative company that will not long be in business to service the product, honor guarantees, or issue updated versions. This rational consumer behavior is subverted if it is based on fraudulent vaporware promises.

[179] As noted, a large vaporware marketer can raise a competitor's advertising and other promotional expenses by forcing them to overcome competition from a nonexistent product. By making the market for the smaller competitor's product less promising, the vaporware announcement can also raise smaller rivals' costs for obtaining financing, or perhaps block it altogether. Experts in the field of raising rivals' costs (RRC) theory have used increasing competitors' costs of promotion as a prototypical example of such a tactic. *See* David T. Scheffman, *The Application of Raising Rivals' Costs Theory to Antitrust*, 37 ANTITRUST BULL. 187, 205 (1992).

[180] A competitor who is just about to enter a market with an advanced product with features not currently available may well decide not to do so in light of an announcement from a vaporware marketer with substantial market power that it is about to market just such a product. Even though the vaporous product does not exist, the smaller competitor might well decide to withhold its product from the market in order to add features that the larger predator does not yet even claim before introducing it.

achieve the anticompetitive results of perhaps the most widely acknowledged form of predatory behavior without incurring the costs of litigation.

Thus, fraudulent vaporware marketing is arguably one of the more plausible forms of predation yet theorized. It has been observed in nature, and its theoretical underpinnings provide much less reason to be skeptical than those of many other supposedly predatory practices that have been scrutinized so carefully by economists.[181]

3. *Determination As to Whether the Injury to Competitors Has Resulted in Injury to Competition and an Increase in the Market Power of the Predator*

Critics who oppose application of antitrust law to fraudulent vaporware marketing do so based in part on their doubts about the viability of the practice as a competitive strategy. First, critics doubt that fraudulent vaporware marketing can be an effective strategy in light of the long-term injury vaporware inflicts upon the predator's reputation as a reliable source of products. Second, they doubt that fraudulent vaporware marketing can create gains that can be preserved in the long term in competitive markets. These two issues, though closely related, will be discussed separately.

a. *Viability of Fraudulent Vaporware Marketing as a Strategy for Injuring Competitors and Competition*

Critics are probably correct in asserting that a fraudulent vaporware marketer will likely suffer some injury in the market as a result of its failure to live up to its promises regarding when its products will reach the market and the features those products will carry.[182] Nonetheless, even

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[181] Myers has argued that reasons to doubt the validity of predatory pricing claims "do not apply as persuasively to claims of anticompetitive litigation," *supra* note 147, at 596, for several reasons, including (a) predatory litigation does not have a direct effect on price levels, and (b) litigation may not be as costly for the dominant firm as predatory pricing. *See id.* at 596–99. Obviously, predatory vaporware announcements do not have a direct effect on price levels and not only are not as costly to the dominant firm as predatory pricing, but are almost cost free to the predator.

[182] Perhaps vaporware marketers can be punished by investors more effectively than by consumers. Following one announcement by Microsoft that it would not be able to fulfill its earlier vaporware announcements regarding the delivery date of Windows 95, the company's stock price dropped by 4.5%. *See* Boudreaux, *supra* note 33, at A21 (according to the author, this 4.5% drop in share price caused a $78 million drop in Microsoft's value).

assuming that the predator will ultimately suffer injury to its reputation from an inaccurate vaporware announcement, effective predation remains possible so long as the injury to the predator is less than the injury to the victim.[183]

The substantial competitive advantages stemming from fraudulent vaporware predation that were described earlier can outweigh any injury to credibility, as the following discussion illustrates.

i. *Vaporware Marketing Is a More Viable Predatory Strategy Than Predatory Pricing*

Those in the Chicago School who doubt the viability of predatory pricing as an anticompetitive strategy entertain similar doubts about fraudulent vaporware marketing. However, vaporware is simply a more plausible anticompetitive tool than predatory pricing. Therefore, economic theory and empirical evidence undermining the theory of predatory pricing do not necessarily show that fraudulent vaporware marketing could not be an effective tool of predation.

Because it costs virtually nothing to issue a fraudulent vaporware marketing release,[184] the vaporware predator, unlike the price predator,

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Of course, such a stock drop punishes Microsoft's shareholders, including Bill Gates, but not particularly the company (unless it is planning a stock offering) and certainly not the company's market share.

[183] *See* Campbell, *supra* note 138, at 1629–30.

[184] Product press releases are an efficient, yet relatively inexpensive means of promoting a new product. *See* JORDAN GOLDMAN, PUBLIC RELATIONS IN THE MARKETING MIX 225 (1984); ROMAN HIEBING & SCOTT COOPER, HOW TO WRITE A SUCCESSFUL MARKETING PLAN 15 (1990).

Once a company with Microsoft's high profile decides to tout a product-in-development, the trade press, which is extremely important in the high-tech industry, *see* Stan Veit, *Stan Veit's History: Computer Magazines Created the Channels*, COMPUTER SHOPPER, Oct. 1991, at 693 (describing importance of computer magazines to evolution of the computer industry), will typically provide tremendous amounts of free publicity. Microsoft is masterful at garnering such free publicity, and its constant stream of vaporware announcements are an important part of that strategy. *See* Jayson Aycock, *Windows Development Saga: That Was Then, This Is 95*, AUSTIN AM.-STATESMAN, Aug. 19, 1995, at D6 ("While industry trade publications have been following every detail of the saga, Microsoft's delays have had consumer PC publications hitching and starting, running an endless series of big preview stories for an operating system that kept teasing them with new release dates."); Mike Langberg, *Microsoft to Unleash Hype to Open Windows 95*, AUSTIN AM.-STATESMAN, Aug. 17, 1995, at C1 ("Microsoft also has reaped huge benefits from free publicity in the form of numerous stories in computer magazines and the general news

need not incur short-run losses that must be made up via long-run monopoly pricing. "The costs the rivals incur in countering the false information will, in almost all cases, exceed the costs of producing and disseminating that information."[185] Any increase in market share and subsequent market power is simply "gravy" for the vaporware marketer.

Furthermore, when economists evaluate predatory pricing and related tactics, they often unduly minimize the benefits a predator derives from gaining a reputation among rivals as a fierce competitor.[186] Even predatory activity which carries costs for the predator in one market may achieve similar benefits costlessly in other markets where competitors fear the predator's reputation as a vicious competitor. This matter will be explored in more detail in the next Section,[187] but vaporware is obviously an easy way to send a signal that a company is a vigorous competitor and is not to be trifled with.

ii. *Consumer Backlash and the Self-Correcting Market*

The main argument[188] used by those who doubt the utility of fraudulent vaporware marketing as an anticompetitive tool is based on the assumption that vaporware marketing would, in the long run, cause unacceptable

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media. Reporters and editors don't want their publications to appear technologically backward, so they are flocking to write about Windows 95 . . . .").

185 Gerla, *Federal Antitrust*, *supra* note 171, at 1063.

186 *See* Oliver Williamson, *Delimiting Antitrust*, *in* REVITALIZING ANTITRUST IN ITS SECOND CENTURY, *supra* note 139, at 217 (Because of reputational factors, "the purported irrationality of predatory pricing has been discredited.").

187 *See infra* notes 275–77 and accompanying text.

188 Injury to reputation is just about the only disadvantage to fraudulent vaporware marketing that is addressed by those who oppose bringing that activity within the sphere of antitrust law. One other disadvantage that was noted above is that when a predator preannounces a new product, it may freeze not only the target's product sales, but also the sales of its own existing product. *See supra* note 48 and accompanying text. This freezing effect is possible, but may not impede vaporware marketing for at least three reasons. First, the vaporware marketer may not currently have a product in the market to freeze. Second, if the vaporware marketer does have a current product and is preannouncing an upgrade, it can avoid the freezing effect by promising consumers that if they buy the current version they will be given a discount rate on the upgrade when it is delivered. *See* Stanley M. Besen & Joseph Farrell, *Choosing How to Compete: Strategies and Tactics in Standardization*, 8 J. ECON. PERSP. 117, 124 (1994) (calling this a tactic to avoid the "Osborne effect" because Osborne Computers sealed its own doom with a vaporware announcement). Third, if the vaporware marketer, like Microsoft, has many products in many markets, it will not be seriously damaged by a freeze in the market that might cripple a smaller competitor.

damage to any predator's reputation.[189] This traditional view argues that disappointed consumers will punish the predator by refusing to buy its goods. This "consumer backlash," so the argument goes, prevents vaporware marketing from being a viable predatory tactic. However, there is strong evidence that the traditional view is based upon an overly optimistic assessment of the efficiency of the marketplace. There are several reasons why a fraudulent vaporware strategy might succeed despite the threat of loss of credibility with consumers.

To facilitate examination of this issue, assume hypothetically that Microsoft's critics are correct in charging that Microsoft intentionally misrepresented both when it would bring its original Windows operating system software to the market and the features that the software would contain when marketed.[190] Assume further that, absent the misrepresentations, many customers would have chosen Apple's Macintosh operating system software for their first purchase or that consumers using MS/DOS software but desiring the features of a GUI system would have switched to Apple immediately rather than wait three years in order to buy Windows, which most experts believe to be inferior to Apple's Macintosh.[191] Misled by Microsoft's repeated promises, the customers ultimately buy Windows software and complementary applications software. Over time some of them learn that Windows, in addition to being

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[189] For example, economist Franklin M. Fisher, IBM's key expert witness in its famous 1967–1981 antitrust case, argued that a product preannouncement could not be anticompetitive unless it was made in bad faith. *See* Franklin M. Fisher, *Games Economists Play: A Noncooperative View*, 20 RAND J. ECON. 113, 118 (1989). Perhaps, then, Fisher agrees with this Article that fraudulent vaporware marketing can constitute condemnable conduct under section 2. However, he believes that "with rational customers, it [is] unlikely to represent a practice that [can] be successfully repeated." *Id.*; *see also* FISHER ET AL., *supra* note 7, at 290 ("Only deliberate falsehood could possibly be anticompetitive here, and that is highly improbable since a firm that practiced such tactics would acquire a tarnished reputation that would ill serve it in the future.").

Regarding false advertising in general, see generally RICHARD A. POSNER, REGULATION OF ADVERTISING BY THE FTC 4–9 (1973) (arguing that the market itself adequately deters false advertising in large part because of cost to seller of developing a reputation for dishonesty).

[190] These charges were discussed *supra* notes 70–82 and accompanying text.

[191] *See* Steve Lohr, *Business Often Goes to the Swift, Not the Best*, N.Y. TIMES, Aug. 6, 1995, at E3 [hereinafter Lohr, *Business to Swift*] (reporting that reviewers agree that Windows 95 is such an improvement on the original Windows that it is almost as good as Apple's 10-year-old Macintosh system).

three years late to the market, is inferior to Apple in terms of its GUI features.[192]

Clearly, Microsoft's failure—whether intentional or otherwise—to deliver on its vaporware promises did not prevent it from dominating the world market for operating systems software or leveraging itself into a leading position in many markets for applications software.[193] The very fact of this success undermines the traditional reasoning, as does the very existence of vaporware marketing (or of false advertising in general, for that matter).

Why do the facts not fit the traditional theory? Microsoft was, no doubt, punished somewhat by consumers for breaching its vaporware promises, but why was it not punished sufficiently to discourage the practice? There are several reasons. First, if competitors are destroyed by the vaporware strategy, consumers may have no choice but to buy from the predator whenever the product finally arrives and in whatever form it takes. Microsoft is accused of using vaporware marketing, in conjunction with other tactics, to successfully eliminate DR-DOS from the United States market.[194] Whether or not this particular accusation is accurate, it is certainly conceivable that in a given case such an injury could be inflicted by fraudulent vaporware marketing. When such injury leads to creation or maintenance of a monopoly position, the dominant firm has little to worry about in terms of consumer backlash.[195]

Second, a single incident of false representation seldom justifies an inference regarding the seller's future behavior and therefore seldom justifies a consumer's decision to boycott that seller's goods in the future.[196] Any disappointment with the seller might well be overcome by

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[192] This situation fits into Nelson's taxonomy as an "experience quality" (one that can be detected only after buying the product) rather than a "search quality" (which can be detected before buying the product). *See* Phillip Nelson, *Advertising as Information*, 82 J. POL. ECON. 729, 730 (1974). Nelson believes that most false advertising will relate to experience qualities. *Id.* at 730.

[193] *See supra* note 14.

[194] As noted earlier, *supra* note 90 and accompanying text, despite being touted by many experts as superior to Microsoft's competing products, DR-DOS has been withdrawn from the United States market.

[195] *See* Robert B. Reich, *Toward a New Consumer Protection*, 128 U. PA. L. REV. 1, 29 (1979) (In cases of "excessive concentration, goodwill may cease to be an important factor, since patronage can often be guaranteed without it.").

[196] *See* Richard Craswell, *Interpreting Deceptive Advertising*, 65 B.U. L. REV. 658, 723 (1985) ("A single false inference tells little about the likelihood of drawing false inferences from that seller in the future, or about how that likelihood compares to the risk of

additional promises of new and improved products.[197] Furthermore, major market players typically have strong credibility and a reservoir of goodwill that can withstand one (and sometimes several) vaporware episodes. For example, even with its extensive track record of vaporware announcements, Microsoft is so widely viewed as a successful company that its preannouncements are given credence where similar announcements by other companies would be ignored.[198]

While a vaporware announcement that fails to pan out can destroy a small company, a market powerhouse such as Microsoft or IBM can survive such failures. A decade ago, IBM apologists argued that IBM would never intentionally issue false vaporware statements because of the damage to its reputation that would follow.[199] The following response from Professor Dennis is equally applicable to Microsoft today:

> The problem [with this argument] is that the risk of unjustified preannouncement by IBM is different for IBM and for its customers. IBM's size allows it to make mistakes, even substantial ones, and to correct those mistakes over time (if not for specific customers, then for the community of customers). For other firms, a single major error with respect to product development may be fatal. Other firms may not have a variety of different products that allows IBM to diversify its risk.

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being deceived by sellers of competing brands, so a rational consumer should not necessarily respond to deception by never buying that product again.").

[197] *See* Reich, *supra* note 195, at 28.

[198] *See* James Coates, *Beware the Bearer of Hype*, AUSTIN AM.-STATESMAN, Apr. 18, 1994, at F1.

[199] The lengthy government investigation of Microsoft has often been analogized to the even lengthier 13-year proceeding against IBM that was filed in 1969 and ran until President Reagan's assistant attorney general for antitrust, William Baxter, dismissed the suit after seven years of trial, in 1982. The analogy is strengthened by the fact that, like Microsoft, IBM was often accused of an elaborate strategy to use vaporware announcements in an anticompetitive fashion—the so-called FUD tactics referred to earlier. *See* Jon B. Streeter, *Antitrust Redux: Microsoft Litigation*, NAT'L L.J., Apr. 7, 1995, at C19; *see also* Frederic G. Withington, *Microsoft's Troubles Will Fade Away*, COMPUTERWORLD, Apr. 17, 1995, at 37 (noting numerous similarities, including vaporware claims, between IBM and Microsoft cases).

Like Microsoft, IBM issued blanket denials. As with Microsoft, there existed substantial evidence that IBM did, indeed, engage in vaporware marketing. *See, e.g.*, MCKENNA, *supra* note 47, at 23–24 (giving, as one example, the demise of Amdahl Corporation in the wake of an IBM vaporware announcement).

Even some IBM executives appeared to believe that the Government's antitrust case had merit. *See* RICHARD T. DELAMARTER, BIG BLUE: IBM'S USE AND ABUSE OF POWER 177 (1986).

> Customers may believe that IBM's superior size will allow it to experiment with and support marginal products that a smaller firm would be forced to abandon. Thus, IBM does not stand to lose as much in customer support as would other firms as a consequence of faulty preannouncement. Moreover, the adverse effect on smaller rivals of holding a relatively small percentage of its customers by preannouncement might outweigh any potential loss to IBM.[200]

A large company such as Microsoft or IBM that constantly announces new products can build up a track record of relatively accurate announcements and then strategically and cynically use fraudulent vaporware marketing to damage competition in a particularly important market without destroying its overall reputation.

Third, if Microsoft can induce a customer to buy its product rather than that of a competitor when, in the absence of the vaporware announcement, the customer would have purchased the competitor's product, Microsoft may win a permanent convert for several reasons:

- Many consumers may never realize they were misled as to the quality of the product. Although they will surely know that they had to wait longer than promised to buy the vaporware announcer's product, because of the technical nature of the product they bought, they may never learn that the competing product was of a higher quality and had more useful features.[201] They may well assume that any problems they have with the system they bought are due to their own technical limitations, rather than to problems inherent in the product.[202] As GUI systems go, Windows was certainly serviceable, and most consumers are probably unaware of the fact that most experts believed the Apple system to be superior. Therefore, these customers will not desire to retaliate against Microsoft.
- The customer may never replace the product. A seller who is not particularly concerned with repeat purchases by the same consumer is

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[200] Roger J. Dennis, *Book Review: Folded, Spindled, and Mutilated*, 70 CORNELL L. REV. 580, 593 n.48 (1985).

[201] *See* Lee Goldman, *The World's Best Article on Competitor Suits for False Advertising*, 45 FLA. L. REV. 487, 499 (1993) (stating that after purchase, the consumer is either happy with the seller's product and never discovers that the competitor's product is superior, or unhappy with the seller's product, but assumes that the competitor's product is even worse).

[202] Professor Reich refers to this behavior as the consumer's "difficulty in detecting hidden costs." *See* Reich, *supra* note 195, at 27; *see also* Michele Matassa Flores, *Windows 95 Is Equipped with Plenty of Glitches*, AUSTIN AM.-STATESMAN, July 1, 1995, at C8 (technical writer blamed her problems with Windows on herself).

nearly immune to retaliation by that consumer.[203] Operating systems software (and applications software) can last for a long time and be expensive to replace. They may never be replaced, or more frequently, may be replaced only long after memories of earlier disappointments have faded. The disappointed consumer of a soda has substantially more power to punish the false advertiser than does the consumer of expensive and durable consumer products.[204]

• Cognitive dissonance—the tendency of people to selectively look for facts and reasons that support decisions they have already made[205]—may induce even consumers who know they were misled to rationalize and convince themselves that they made the right decision.

• The endowment effect—the tendency of people to value what they have (the Microsoft system) more highly than what they do not have (a

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[203] *See* Reich, *supra* note 195, at 28–29.

[204] *See* Ross D. Petty, *Supplanting Government Regulation with Competitor Lawsuits: The Case of Controlling False Advertising*, 25 IND. L. REV. 351, 355 (1991) (arguing if goods are infrequently purchased and evaluation of experience factors takes a long time, businesses have stronger incentives to advertise falsely because of reduced ability of consumers to retaliate); Roger E. Schechter, *The Death of the Gullible Consumer: Towards a More Sensible Definition of Deception at the FTC*, 1989 U. ILL. L. REV. 571, 615 [hereinafter Schechter, *Gullible Consumer*] (same).

[205] In other words, had they been told the truth, the customers would not have bought the Microsoft product in the first place. However, once they have done so, psychological forces induce them to convince themselves that they have done the right thing. Due to cognitive dissonance, persons often accommodate their preferences to what they can have or what they do have. Regarding the concept of cognitive dissonance, see generally JON ELSTER, SOUR GRAPES: STUDIES IN THE SUBVERSION OF RATIONALITY 109–40 (1983) (stating that cognitive dissonance forces preferences that may themselves be shaped by outcomes); LEON FESTINGER, A THEORY OF COGNITIVE DISSONANCE 128–34 (1957); Deborah L. Rhode, *The Future of the Legal Profession: Institutionalizing Ethics*, 44 CASE W. RES. L. REV. 665, 685 (1994) (arguing that because of cognitive dissonance, persons are more likely to register and retain information compatible with earlier decisions).

Once they have made this decision, a second phenomenon works in favor of the vaporware predator—the fact that "most individuals change their minds only rather slowly, except, of course, in the face of overwhelming evidence." Yehudah Kotowitz, *Commentary on Papers Presented by Phillip Nelson and Sherwin Rosen*, *in* ISSUES IN ADVERTISING: THE ECONOMICS OF PERSUASION 197 (David Tuerck ed., 1978). Therefore, if the process of cognitive dissonance induces consumers to conclude that they made the correct decision in buying the predator's product, they will not easily be disabused of that notion, even if it is wrong.

rival's system)—complements cognitive dissonance in reducing consumer resentment over broken promises.[206]

• The installed base phenomenon also inhibits customer backlash. Having desired a GUI operating system, consumers have purchased Windows. Even if it does not live up to its promises and does not function as well as Apple's Macintosh, it is a workable system for which they have bought much software (for example, the MS/Word word processing software) that will not work with Apple's operating system. Even if the consumers would like to punish Microsoft, they will rationally feel constrained from doing so by switching costs.[207] Among those switching costs are search costs—the time and expense of looking for a replacement.[208]

• Consider sunk costs. Not only have the consumers spent a lot of money on software that is compatible with Windows, they have also invested time (and possibly money) in learning how the Windows system works. To switch to the Apple system (or that of another competitor) would require them to forfeit a large investment of both time[209] and

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[206] *See* Roger E. Schechter, *Additional Pieces of the Deception Puzzle: Some Reactions to Professor BeVier*, 78 VA. L. REV. 57, 71–72 (1992) [hereinafter Schechter, *Additional Pieces*]; Cass R. Sunstein, *Legal Interference with Private Preferences*, 53 U. CHI. L. REV. 1129, 1151 (1986) (suggesting that the endowment effect complements cognitive dissonance).

The endowment effect can be bolstered by the tendency of people, for no rational economic reason, to repeat purchase out of simple habit or loyalty. *See* Paul Klemperer, *Markets with Consumer Switching Costs*, 102 Q. J. ECON. 375, 376 n.2 (1987) [hereinafter Klemperer, *Markets with Switching Costs*].

[207] *See* Klemperer, *Markets with Switching Costs*, at 375 ("[I]f a consumer has learned to use one [computer] firm's product line and has invested in the appropriate software, he has a strong incentive to continue both to buy machines from the same firm and to buy software compatible with them."); Peter S. Menell, *An Analysis of the Scope of Copyright Protection for Application Programs*, 41 STAN. L. REV. 1045, 1070 (1989) (stating that the installed base problem can create excess inertia, making it troublesome for buyers to switch, even to superior products).

[208] *See* Goldman, *supra* note 201, at 500–01 (suggesting that McDonald's and Holiday Inn know well that consumers like to stick to a known quantity (and quality) even if they know it may not be the best on the market); Klemperer, *Markets with Switching Costs*, *supra* note 206, at 376 n.1 (noting that costs of switching arise from the mere fact that a consumer, in order to switch brands, may have to buy the new brand in order to discover whether it is suitable).

[209] Steve Wozniak, cofounder of Apple, has recently noted that it is very difficult for consumers to switch from an Apple operating system to a Microsoft operating system (and presumably vice-versa). *See* David Einstein, *Wozniak Laments Apple's Blunders*, AUSTIN AM.-STATESMAN, Sept. 4, 1995, at C5; *see also* Dratler, *supra* note 119, at 706 (Having

money. Therefore, if Apple offers a comparable advance to Windows 95, consumers that already own Windows products will rationally choose Windows 95, even if they realize that they have been misled in the past by Microsoft.[210] Both the courts[211] and the Department of Justice[212] have recognized that "the realities of the computer marketplace often constrain consumers' freedom to choose . . . because expensive hardware purchases 'lock in' customers, limiting their reasonable choices."[213]

Relatedly, consumers may naturally assume that fraudulent vaporware marketing is illegal and that the law will punish such marketing.[214] Therefore, they may well believe that even though Microsoft or some other company has been unreliable in the past, surely it is not lying now. To the extent that the law of false advertising (and perhaps antitrust) is not

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learned a particular word processing program, "I would no more think of converting to [another], and thereby losing all of my investment in macros and training, than I would consider doing all my professional writing henceforth in Swahili.").

[210] For these reasons, consumers may not have the normal weapon of withholding their business in order to punish false advertisers. The touted "discipline of continuous dealings" is missing. *See* Robert E. Scott, *Conflict and Cooperation in Long-Term Contracts*, 75 CAL. L. REV. 2005, 2009 (1987) (quoting ADAM SMITH, THE WEALTH OF NATIONS 700 (1776) (E. Cannon ed., 1937)). However, consumers can tell their friends and relatives about their experience, *see* Robert B. Reich, *Preventing Deception in Commercial Speech*, 54 N.Y.U. L. REV. 775, 794 (1979), *if* the friends and relatives do not have the same constraints.

Professor Gifford argues that because the seller must compete for new customers, the old customers, even if they are locked in, will not be gouged price-wise. *See* Daniel J. Gifford, *The Damaging Impact of the* Eastman Kodak *Precedent Upon Product Competition: Antitrust Law in Need of Correction*, 72 WASH. U. L.Q. 1507, 1520 (1994). One hopes this proposition is correct, but it does not defeat the point made here—that the lock-in effect inhibits the ability of consumers to punish vaporware marketers. The establishment of an installed base coupled with network externalities may give those new customers a very strong reason to buy the established seller's product, even in favor of a technically superior model.

[211] *See, e.g.*, Eastman Kodak Co. v. Image Technical Servs., Inc., 504 U.S. 451, 476 (1992); Digidyne Corp. v. Data Gen. Corp., 734 F.2d 1336, 1342 (9th Cir. 1984).

[212] *See* U.S. Department of Justice, Antitrust Guidelines for the Licensing and Acquisition of Intellectual Property, 7 Trade Reg. Rep. (CCH) ¶ 50,141 (1994).

[213] BAND & KATOH, *supra* note 107, at 20–21; *see* Kelly A. O'Connor, *Emerging Antitrust Issues Affecting the Computer Industry*, 17 HASTINGS COMM. & ENT. L.J. 819, 821 (1995).

[214] *See* Nelson, *supra* note 192, at 749–51.

enforced, as it generally has not been in these vaporware cases,[215] a trap is set for unwary consumers.

If vaporware marketing becomes so bad that it becomes apparent even to relatively undiscerning customers that the laws against false advertising are not being enforced, they may react with blanket disgust and punish high-tech companies indiscriminately. In some instances, it appears that innocent marketers with spotless on-time records have suffered for the sins of their less scrupulous competitors.[216]

To reiterate, a consumer who is misled about the taste of a fifty cent soda or the effectiveness of a three dollar bottle of pain reliever can easily punish the firm that markets that product by never buying it again.[217] The consumer of an operating system or applications software is seldom similarly empowered.[218]

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[215] The FTC has occasionally sought to punish vaporware marketing. *See, e.g., In re* Coleco Indus., Inc., 1989 FTC LEXIS 43 (1989) (reporting complaint filed against Coleco for advertising features of a product when it did not plan to market the modules necessary for those features for 12 to 18 months and had, indeed, already decided to abandon plans for one of the advertised features); *In re* NEC Home Electronics, 110 F.T.C. 501 (1988) (reporting complaint filed against computer company for falsely claiming that the memory capacity of one of its microprocessors could easily be expanded in the future when the software necessary to do so had never been available in the United States). *See generally* Lewis Rose, *Vaporware Rules: The Limits on Dry-Testing*, MARKETING COMPUTERS, Mar. 1995, at 18.

[216] *See* Joyce Lane, *Promotion Peddlers Tug on the Reins*, SAN JOSE BUS. J., Apr. 28, 1986, § 2, at 6 ("Vaporware and otherwise late products have created disappointed and angered customers, dealers and editors, and hurt the reputations of companies with histories of on-time delivery as much as the tardy ones.").

This result is not surprising, for widespread false advertising naturally causes consumer distrust. *See* Jean Wegman Burns, *The Paradox of Antitrust and Lanham Act Standing*, 42 UCLA L. REV. 47, 85 n.157 (1994) [hereinafter Burns, *Paradox*].

[217] Even the purchaser of a soda or a bottle of pain reliever might not punish false advertisers because (a) cognitive dissonance convinces her that she is using the best product, (b) she never tries the competition and therefore assumes that it does not taste or work any better, or (c) having been misled by one false advertisement, she now disbelieves all advertising in the industry.

[218] Belatedly, Professor BeVier has argued that consumers can protect themselves from false advertising *ex ante* by use of skepticism. *See* Lillian R. BeVier, *Competitor Suits for False Advertising Under Section 43(a) of the Lanham Act: A Puzzle in the Law of Deception*, 78 VA. L. REV. 1, 13 (1992). Certainly there is truth to this contention, and many high-tech professionals have become extremely skeptical of vaporware announcements. However, as Professor Schechter has answered, there is substantial ground for refusing to invest too much faith in this mechanism for consumer self protection because (a) advertisers often resort to explicit credence claims (claims that cannot be factually

Even if buyers do resent having been misled and do not purchase the seller's product again, they probably would not have made the purchase absent the misrepresentation, so the predator may benefit anyway.[219] A consumer who, absent Microsoft's vaporware announcements, would have bought the Apple operating system software would likely have become ensconced in that technical milieu. The difficulty of switching would have made it difficult for Microsoft to obtain that customer's loyalty later. Given these considerations, Microsoft or other firms in a similar position may well enjoy anticompetitive benefits that can outweigh the damage their reputations will sustain through fraudulent vaporware marketing.

b. *Fraudulent Vaporware Marketing's Contribution to Long-Term Market Power*

Even unfair and generally anticompetitive activity is not conduct violative of section 2 of the Sherman Act unless it contributes to establishment or maintenance of a durable monopoly position.[220]

A fraudulent vaporware announcement may deter customers from purchasing a small competitor's product, injuring that competitor in the

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substantiated and therefore rely upon the naked credibility of the advertiser), belying any substantial level of consumer skepticism; (b) even prominent and reputable firms engage in falsified advertising for credence traits; (c) consumers, knowing that the law generally condemns false advertising, tend to believe such claims on grounds that the law would not let the advertiser lie; and (d) increased wariness or skepticism is not the same thing as disregarding the advertising. *See* Schechter, *Additional Pieces*, *supra* note 206, at 76–79; *see also* Gerla, *Federal Antitrust*, *supra* note 171, at 1075 (stating that consumers are more likely to believe false information when it pertains to infrequently purchased goods that are technically complex); Goldman, *supra* note 201, at 497, 498, 501–03 (giving examples of clearly false claims made by prominent companies and noting difficulties consumers have in detecting falsehoods); Robert Pitofsky, *Advertising Regulation and the Consumer Movement*, *in* ISSUES IN ADVERTISING, *supra* note 205, at 33 (arguing that empirical data indicates that consumers are frequently influenced by the content of experience quality advertising).

Nelson has argued that consumers will not pay attention to advertising claims about infrequently purchased experience goods (such as computers and operating systems software, presumably). *See* Nelson, *supra* note 192, at 749–51. However, empirical evidence on the effects of advertising contradict Nelson's surmise. *See* Mark F. Grady, *Regulating Information: Advertising Overview*, *in* THE FEDERAL TRADE COMMISSION SINCE 1970: ECONOMIC REGULATION AND BUREAUCRATIC BEHAVIOR 222, 224 (K. Clarkson & T. Muris eds., 1981), *cited in* Craswell, *supra* note 196, at 721 n.200.

[219] *See* Craswell, *supra* note 196, at 722–23.

[220] *See* Reazin v. Blue Cross & Blue Shield, 899 F.2d 951, 968 (10th Cir. 1990).

short run. However, if the long-run impact of this tactic is simply to open the door for other competitors to enter the fray, no lasting step toward maintaining or attempting a monopoly has been taken. The act may be grist for an unfair trade practices or other business tort suit, but it is not the stuff of which a Sherman Act section 2 violation is made.

Areeda and Turner, who emphasize this important aspect of a section 2 violation,[221] illustrate with reference to false advertising. Because fraudulent vaporware marketing tactics are a particularly odious form of false advertising, the Areeda-Turner discussion is particularly instructive:

> In a perfectly competitive market, a seller could sell all he wished at the going market price, and there would be no need to engage in false advertising. But deception does not imply market power, and only rarely will it make a significant contribution to power. Such practices, while presumably leading to a short-run increase in sales, are typically transitory or insubstantial in nature and make no contribution to a durable market share, even in many instances where practiced by a dominant firm. *This is not to say that unfair competition may never have a significant effect*; it is only to say that it must be shown that such an effect probably did result or would have resulted.[222]

Areeda and Turner are obviously skeptical that a false advertising practice like vaporware will typically sustain an existing monopoly position or help to create one. On the other hand, as the highlighted portion of their statement illustrates, even they concede that in some circumstances false advertising wielded by a dominant firm might well have the required

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[221] *See* AREEDA & TURNER, *supra* note 7, ¶ 828b, at 322–23.

[222] *Id.* § 828b, at 322 (emphasis added); *see also* Gerla, *Federal Antitrust*, *supra* note 171, at 1038–39 (expressing concern that Areeda and Turner's suggested presumption that false advertising has only a *de minimis* effect on defendant's market power is too restrictive and presents danger that legitimate cases of predation will go unpunished).

Dean Arthur also argues that information gaps (including false advertising and presumably vaporware) create only nonstructural market power which is limited by the buyer's search costs. He argues that buyers can rely on their own search efforts, on those of consumer organizations and specialty magazines, on the advertising of competitors, and on consumer protection regulations, and therefore, "[i]nformation gaps are in little need of antitrust regulation." Thomas C. Arthur, *The Costly Quest for Perfect Competition: Kodak and Nonstructural Market Power*, 69 N.Y.U. L. REV. 1, 36–38 (1994). However, when such nonstructural market power is used to supplement existing structural market power, a more foreboding situation arises. When a firm that has structural market power or the present ability to acquire it uses nonstructural marketing power arising from techniques such as fraudulent vaporware marketing, then the antitrust laws must surely be implicated.

significant impact.[223] Scenario #1 assumes that a dominant player is the vaporware marketer.

i. *Contestable Markets and Entry Barriers*

Because entry barriers are the most important factors in determining the durability of a monopolist's market power[224] and the likelihood of success of a would-be monopolist,[225] their existence is a key factor in evaluating the long-term impact of fraudulent vaporware marketing. If the particular market has substantial entry barriers, then the elimination of a key competitor by a dominant firm may well contribute to retention or attainment of a durable monopoly position. On the other hand, if there are no substantial entry barriers, the knockout of one competitor will likely lead to its replacement by others.[226]

Some economists assume that most markets are "contestable" and that entry barriers are usually low, providing evidence of the irrelevancy of antitrust law.[227] Indeed, this assumption informed much of the Reagan-

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[223] Areeda and Turner would presume that false advertising does not cause monopoly harms, and require plaintiffs to overcome the presumption by "proof that the representations were clearly false, clearly material, clearly likely to induce reasonable reliance, made to buyers without knowledge of the subject matter, continued for prolonged periods, and not readily susceptible of neutralization or other offset by rivals." AREEDA & TURNER, *supra* note 7, ¶ 738a, at 279.

[224] *See* James W. Meehan, Jr. & Robert J. Larner, *The Structural School, Its Critics, and Its Progeny: An Assessment*, *in* ECONOMICS AND ANTITRUST POLICY, *supra* note 139, at 179, 201 ("[I]t is generally accepted that without barriers to entry there can be no persisting monopoly power.").

[225] *See* Bacchus Indus. v. Arvin Indus., 939 F.2d 887, 894 (10th Cir. 1991) (holding that even though defendant had 55% of market share, lack of barriers to entry prevented defendant from achieving monopoly power for any significant period of time); Metro Mobile CTS, Inc. v. NewVector Communications, Inc., 892 F.2d 62, 63 (9th Cir. 1989) (holding even 100% market share inadequate to indicate dangerous probability of success in a market where virtually no barriers to entry exist).

[226] In the absence of entry barriers, it is generally assumed that potential competition from would-be entrants restrains monopolists from abusing their power. It is often ignored that potential competition can also act as a barrier to entry, for potential entrants will enter only if they believe that they can capture profits and may not enter if they fear that other entrants will follow them and take their profits away. "Entry is motivated by the search for monopoly rents." Stiglitz, *supra* note 165, at 901, 924.

[227] There have been numerous criticisms of the contestability theory, in addition to those discussed later in this Section. *See, e.g.*, Marius Schwartz & Robert J. Reynolds, *Contestable Markets: An Uprising in the Theory of Industry Structure: Comment*, 73 AM. ECON. REV. 488 (1983) (arguing that theory of perfect contestability rests on implausible

Bush era antitrust policy. For example, those administrations approved every single proposed merger in the airline industry on the assumption that the easy transportability from market to market of the major physical assets of the industry (airplanes) ensured contestability.[228]

In practice, however, entry barriers inconsistent with theory seem to have led to a dramatic concentration of the airline industry.[229] Indeed, there are several industries with large concentrations of economic power in the United States where contestability must be questioned,[230] and empirical evidence seems to show that prices are higher where direct competition is absent even in theoretically contestable markets.[231] Contestability theory is inconsistent with this real world experience because it is based upon a number of unrealistic conditions, including the absence of market imperfections,[232] and ignores strategic interaction between incumbent and entrant firms.[233]

While some economists theorize that entry barriers are generally insubstantial, real firms in the real world report that deterring the entry of

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conditions); Stiglitz, *supra* note 165, at 887 ("[T]he contestability doctrine is particularly inapplicable to industries in which technological change is important . . . .").

[228] *See generally* Elizabeth Bailey, *Contestability and the Design of Regulatory and Antitrust Policy*, 71 AM. ECON. REV., May 1981, at 178, 181 (papers and proceedings) (discussing the effects of contestability on the Civil Aeronautics Board's approval of airline mergers).

[229] *See* Walter Adams & James W. Brock, *Revitalizing a Structural Antitrust Policy*, 39 ANTITRUST BULL. 235, 260–62 (1994) ("[F]ifteen independent airlines operating at the beginning of 1986 had by 1988 been consolidated into six carriers . . . . At twenty-two of the nation's major airports, a single carrier came to control half or more of all air traffic."); Andrew S. Joskow et al., *Entry, Exit, and Performance in Airline Markets*, 12 INT'L J. INDUS. 457 (1994) (casting doubt on market contestability's effectiveness to prevent increases in fares and decreases in outputs following anticompetitive mergers in airline industry).

[230] *See* Baker, *supra* note 138, at 653–54 (citing numerous studies); Timothy F. Bresnahan, *Empirical Studies of Industries with Market Power*, *in* 2 HANDBOOK OF INDUSTRIAL ORGANIZATION 1011, 1051–53 (Richard Schmalensee & Robert D. Willig eds., 1989).

[231] *See* Gregory D. Call & Theodore E. Keeler, *Antitrust Deregulation, Fares, and Market Behavior: Some Empirical Evidence*, *in* ANALYTICAL STUDIES IN TRANSPORT ECONOMICS 221, 244–46 (Andrew F. Daughety ed., 1985).

[232] *See* William G. Shepherd, *Economic Analysis to Guide Antitrust Enforcement: Prospects for Section 2*, 35 N.Y.L. SCH. L. REV. 917, 922, 925 (1990) [hereinafter Shepherd, *Economic Analysis*]; William G. Shepherd, *Illogic and Unreality: The Odd Case of Ultra-Free Entry and Inert Markets*, *in* ANTITRUST AND REGULATION, *supra* note 139, at 232 [hereinafter Shepherd, *Illogic*].

[233] *See* Harbord & Hoehn, *supra* note 139, at 412.

competitors is a very important part of their marketing strategy and that vaporware announcements are a frequently used means of accomplishing that strategy.[234] For these reasons, this Article applies a broader definition of entry barrier than would be accepted by Chicago School economists.[235]

Still, intense competition has curbed and destroyed many of the early kingpins of high-tech industry. High technology fields change continuously

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[234] *See* Smiley, *supra* note 154, at 175.

[235] The proper definition of an entry barrier is, of course, hotly disputed in current antitrust literature. A narrow view is that an entry barrier "is a cost of producing which must be borne by a firm which seeks to enter an industry but is not borne by firms already in the industry and which implies a distortion in the allocation of resources from the social point of view." C.C. von Weizsacker, *A Welfare Analysis of Barriers to Entry*, 11 BELL J. ECON. 399, 400 (1990). Weizsacker notes that entry barriers can also be defined as "socially undesirable limitations on entry, which are attributable to the protection of resource owners already in the industry." *Id.* The former definition is more apt to be used by those who would restrict antitrust law because of its emphasis on the differential between costs imposed on incumbents and costs imposed on would-be entrants. However, the second definition, which derives from the work of Joe Bain, is used here because it is a more practical description and, according to Hovenkamp, "[i]n all antitrust decisions except a few in the FTC, tribunals have relied on the Bainian definition." HOVENKAMP, *supra* note 104, § 1.6, at 40.

Fox and Sullivan describe this "Bainian" (as opposed to "Stiglerian") view of entry barriers as the "Realist/Traditionalist Approach," explaining that under it:

> [A]ny fact or condition that makes entry on an efficient scale less likely or more difficult is relevant. For example, scale economies combined with significant sunk costs, and strategic entry deterrence behavior, can create barriers.
>
> In most markets, barriers to entry are significant or at least difficult to assess. It is a mistake to assume that entry is easy unless proved otherwise.

Eleanor M. Fox & Lawrence A. Sullivan, *Anchoring Antitrust Economics—A Lexicon*, *in* REVITALIZING ANTITRUST IN ITS SECOND CENTURY, *supra* note 139, at 71.

The "Stiglerian" view is, of course, that barriers exist only when the entering firms face costs that incumbent firms did not have to bear to establish their dominant positions. *See* STIGLER, *supra* note 135, at 67–70.

For an excellent discussion of various views on how to define entry barriers, see Harold Demsetz, *Barriers to Entry*, 72 AM. ECON. REV. 47 (1982).

Bork also argues that predation is impossible if there are no significant *re*-entry barriers facing the firm that is forced out of the market. *See* BORK, *supra* note 135, at 149–54. However, reentry barriers are typically present and significant. *See* Ordover & Willig, *supra* note 7, at 12 n.15 (stating that such barriers include depreciation of assets, dispersal of work force, discontinued advertising, and unmaintained brand name).

and rapidly,[236] making it difficult to establish or maintain a monopoly in the computer industry.[237] Microsoft is currently king of many markets, but uneasy rests the crown given the dynamics of technological change.[238] Many believe that it was new technology, not government antitrust enforcement, that broke IBM's stranglehold on the computer world and that rapid technological change will ultimately undo Microsoft's stranglehold as well.[239] Any analyst of antitrust issues in the computer industry must keep this fact in mind.[240]

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[236] The economic life of most software products is less than five years, and Microsoft claims that all of its software products are subject to a major release or upgrade every one to two years. *See* BAND & KATOH, *supra* note 107, at 286 n.6 (quoting Mr. Gaudette of Microsoft).

[237] Dean Arthur recently cited the revolution in the computer industry as a "dramatic recent example of Schumpeter's 'perennial gale of creative destruction' that can 'in the long run enforce behavior very similar to the perfect competitive pattern.'" Arthur, *supra* note 222, at 27–28 n.125 (referencing JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM, AND DEMOCRACY (Harper Colophon 1975)).

[238] *See* Don Clark, *Computer Conferees Hear PCs Could Go with Buggy Whips*, WALL ST. J., Oct. 3, 1995, at B6 (stating that many attendees of computer conference believe that technological changes will render many current Microsoft advantages competitively irrelevant); Evan Ramstad, *Microsoft Is King—For Now*, AUSTIN AM.-STATESMAN, Sept. 4, 1995, at C3 ("While no one is suggesting that Microsoft will be insignificant in the future, the chance exists that it will lose the mantle of leadership just as IBM, Digital Equipment, and Wang did when technology shifted under them.").

[239] *See* Steve Lohr, *Ground Rules for the Great Global Connection*, N.Y. TIMES, May 7, 1995, at E2; *see also* Charles F. Rule, Remarks Before 22d New England Antitrust Conf. 14–15 (1988), *cited in* Irving Scher, *Single-Firm Conduct: The Government's and Antitrust Section's Views*, 59 ANTITRUST L.J. 527, 529–30 (1990) (arguing that the marketplace and technological advances, more than antitrust laws, will serve to inhibit monopoly and to encourage competition).

[240] Certainly, given the rapidly evolving world of computers, the fact that Microsoft has a dominant position today does not mean that it will enjoy such luxury tomorrow:

> No industry in history has ever been subjected to the breakneck rate of change as the modern computer industry. Time and again, when a company seemed on the brink of winning total control of its industry segment—IBM, and earlier Apple, in personal computers, Lotus in spread sheets, DEC in mini-computers—it pitches into the mud the next day.

Charles R. Morris, *A Foolish Legal Battle Against Microsoft*, SEATTLE TIMES, Feb. 27, 1995, at B5.

While this consideration militates against strict scrutiny of the computer industry for possible antitrust violations, it does not justify overlooking blatantly unfair monopolizing conduct. Indeed, because the computer industry is so important and rapidly growing,

Those who are suspicious of the benefits of antitrust law argue that it is easy for small companies to pop up with major innovations to tackle giants such as Microsoft. However, many others argue that in the software industry the halcyon days of yore—when small, quirky firms could develop an innovative new product and quickly make a huge splash as Microsoft once did—are largely gone, thanks in substantial part to Microsoft and its business practices.[241] Microsoft has been accused of using vaporware and other anticompetitive tactics to tame Schumpeter's process of "creative destruction" by raising entry barriers to preserve its dominant position against new competition, thereby reducing social welfare.[242] Once market dominance is attained, it tends to erode only slowly.[243] Thus far, at least, predictions regarding Microsoft's imminent demise have missed the mark rather badly.[244]

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prudent antitrust enforcement can do more good there than in other industries. *See* Donald I. Baker, *Section 2 Enforcement—The View from the Trench*, 41 ANTITRUST J. 613, 614 (1972) (The costs of governmental antitrust enforcement can be justified "in a giant, growing industry like computers, but . . . not . . . in a highly localized monopoly situation.").

[241] *See* G. Pascal Zachary, *Consolidation Sweeps the Software Industry: Small Firms Imperiled*, WALL ST. J., Mar. 23, 1994, at A1.

[242] *See* Baseman et al., *supra* note 89, at 267.

[243] *See* Shepherd, *Theories*, *supra* note 139, at 44; *see also* Jeremy C. Stein, *Waves of Creative Destruction: Customer Bases and the Dynamics of Innovation*, NBER WORKING PAPER NO. 4782, at 1, 2 (1994) (explaining that "[m]any companies maintain their market shares in given product areas for a very long time in large part because of established 'customer bases' which often serve to dramatically reduce the long-run average level of innovation, but which, if overturned, can lead to new waves of innovation").

[244] *See, e.g.*, Joseph A. Pantoja, Note, *Desirable Economic Cooperation Among High-Technology Industries: A Look at Telephone and Cable*, 1994 COLUM. BUS. L. REV. 617, 642 (predicting, inaccurately, that a 1991 IBM/Apple/Motorola alliance would break Microsoft's domination of the market for personal computer software).

Most particularly, many have predicted that the current revolution sparked by the Internet would seriously undermine the "Wintel" standard for PCs. *See* Amy Cortese, *The Software Revolution*, BUS. WK., Dec. 4, 1995, at 78 (noting that the Web is a serious threat to Microsoft's ability to impose its own technological standards). However, Microsoft has so totally refocused its efforts toward dominating the Internet, *see* Joshua Cooper Ramo, *Winner Take All*, TIME, Sept. 16, 1996, at 56, that the question is now being asked is not whether the Internet will kill Microsoft, but whether Microsoft will soon dominate the Internet. *See* Kathy Rebello, *Inside Microsoft*, BUS. WK., July 15, 1996, at 56; Bart Ziegler & Don Clark, *Microsoft Gives Away Control Over Its ActiveX Technology*, AUSTIN AM.-STATESMAN, Oct. 7, 1996, at D6 (quoting industry analyst John McCarthy as saying, "I've come around to the belief that the Internet is not the death of Microsoft—it's Microsoft's salvation."). The most recent figures available at this writing show that in its most recent

ii. *Entry Barriers in High-Tech Industries*

There are several sources of entry barriers in high-tech industries. First, the initial investment to develop software or new computer hardware can be huge, creating a barrier to entry.[245] These fixed costs are largely sunk. Therefore, these costs are extremely influential to the calculations of would-be entrants.[246]

Second, some recent literature points out that when scale economies are substantial, "no matter how high the pre-entry price, new entrants will avoid a market in which the minimum efficient scale of production is large relative to the size of the market."[247] Such economies can occur not only in production, but also in areas such as advertising and promotion expenditures.[248] There is evidence that economies of scale are, in fact,

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quarter Microsoft's earnings were $650 million, a staggering 52% higher than a year earlier. *See* John Markoff, *Microsoft Has 52% Net Rise: Sees Expansion in Core Areas*, N.Y. TIMES, July 23, 1996, at D1. In other words, Microsoft shows no signs of being a company about to be overwhelmed by the forces of creative destruction.

[245] *See* Baseman et al., *supra* note 89, at 270 (Fixed costs of developing operating system "are enormous . . . [and] also largely sunk."); Roger D. Blair & Amanda K. Esquibel, *The Microsoft Muddle: A Caveat*, 40 ANTITRUST BULL. 257, 259 (1995) ("In computer software production, nearly all of the costs are incurred in the design stage."); Hanna, *supra* note 7, at 429 ("[T]he production of software involves significant economies of scale that may preclude entry by competitors who lack sufficient capital reserves.").

[246] *See* Harbord & Hoehn, *supra* note 139, at 415. Additionally, by gaining a credible reputation for predation, an incumbent can raise capital costs to potential new entrants. Joskow & Klevorick, *supra* note 139, at 231.

[247] Baker, *supra* note 138, at 652 (citing several studies). The reasoning behind this conclusion is relatively simple. When there are substantial scale economies, a new entrant must enter at a large scale to keep its marginal costs competitive with those of the existing firms. This new large scale entry will inevitably depress the market price, making it difficult for the new entrant to recover its sunk costs. *See also* Harbord & Hoehne, *supra* note 139, at 416 ("[E]conomies of scale, together with some sunk costs, can constitute a barrier to entry that allows long-run supranormal profits not based on superior efficiency."); Shepherd, *Illogic*, *supra* note 232, at 238 ("[E]conomies of scale . . . can breed both high market shares and high barriers to entry and exit . . . .").

Among the studies which support Baker's statements are: Joseph Farrell, *How Effective Is Potential Competition?*, 9 ECON. LETTERS 67 (1986); Steven C. Salop, *Measuring Ease of Entry*, 31 ANTITRUST BULL. 551 (1986); Schwartz & Reynolds, *supra* note 227, at 488; Stiglitz, *Technological Change*, *supra* note 165, at 883.

[248] *See* KIM B. ROTZOLL & JAMES E. HAEFNER, ADVERTISING IN CONTEMPORARY SOCIETY 77 (1986) ("Economies of scale in advertising can occur because there is a threshold of awareness that advertising must cross."); Spence, *supra* note 140, at 14.

important for software companies in many areas, including advertising, distribution, and customer support.[249]

Third, although economies of scale are exogenously determined, levels of advertising, product differentiation, and research and development are endogenously determined, opening the door for investments driven by a strategy of entry deterrence.[250] If firms make irreversible investments in such things as brand proliferation,[251] reputation building,[252] and

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[249] *See* Michael Meyer, *Hysteria in Cyberspace*, NEWSWEEK, Nov. 21, 1994, at 64 (discussing Microsoft's huge Windows market and the importance of economies of scale); Barbara Darrow & Deborah Gage, *And Then There Were Three—Huge Buyout Plan Pits Novell Against Microsoft, Lotus in the Applications Business*, COMPUTER RESELLER NEWS, Mar. 28, 1994, at 1 (quoting Roger McNamee, general partner of Integral Capital Partners, as saying that "[t]he critical success factors in the [software] business are marketing, distribution and customer support, all of which benefit from economies of scale"); Dratler, *supra* note 119, at 723 (noting economies of scale in computer industry); Michael Katz & Carl Shapiro, *Systems Competition and Network Effects*, 8 J. ECON. PERSPECTIVES 93, 101 (1994) [hereinafter Katz & Shapiro, *Systems Competition*] ("In many software markets . . . economies of scale give rise to imperfect competition."); *Programmers, Artists and Factories—The Software Publishing Model*, COMPUTER INDUS. REP., Dec. 11, 1992, at 8 ("The largest software companies realize great marketing and distribution economies of scale."). Indeed, a wave of consolidations in the software industry stems from competitors' attempts to compete with Microsoft's stature. *See* Junu Bryan Kim, *Fighting Giants with 'Sim'-ple Ideas*, ADVERTISING AGE, May 16, 1994, at 14S (stating that the software industry has turned from "one solely based on innovation to one partly based on economies of scale, including marketing mass").

However, there is also evidence that advertising generally does not lead to economies of scale, and this remains a very controversial area. *See* ROBERT B. EKELUND, JR. & DAVID S. SAURMAN, ADVERTISING AND THE MARKET PROCESS 92–93 (1988); RICHARD SCHMALENSEE, THE ECONOMICS OF ADVERTISING 231 (1972) ("[S]tudies provide no firm evidence supporting the existence, let alone the importance of economies of scale in advertising.").

[250] *See generally* SUTTON, *supra* note 141, at 26.

[251] *See* Schmalensee, *Breakfast Cereal*, *supra* note 161, at 316; SUTTON, *supra* note 141, at 22.

[252] *See* Richard Schmalensee, *Product Differentiation Advantages of Pioneering Brands*, 72 AM. ECON. REV. 349, 360 (1982) [hereinafter Schmalensee, *Product Differentiation*] (arguing that pioneering brands enjoy a first mover advantage that inevitably disadvantages later entrants).

The impact of firm reputation is further enhanced in markets for systems, such as computer hardware and software. *See* Katz & Shapiro, *Systems Competition*, *supra* note 249, at 107 ("In systems markets, even more so than in other markets, firms with established reputations, well-known brand names, and readily visible access to capital have competitive advantages.").

advertising, [253] they can erect entry barriers that will make it difficult for new entrants to compete. Although the role of advertising as an entry barrier is quite controversial,[254] and advertising can be critical to the introduction of new products,[255] it is important to remember that

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[253] Many believe that excessive advertising by a dominant firm is especially likely to erect barriers to entry. *See, e.g.*, JOE BAIN, BARRIERS TO NEW COMPETITION: THEIR CHARACTER AND CONSEQUENCES IN MANUFACTURING INDUSTRIES 114–44 (1956); WILLIAM COMANOR & THOMAS WILSON, ADVERTISING AND MARKET POWER 41–64 (1974); Jeffrey A. Klafter, Note, Berkey Photo, Inc. v. Eastman Kodak Co.: *The Predisclosure Requirement—A New Remedy for Predatory Marketing of Product Innovations*, 10 RUTGERS-CAMDEN L.J. 395, 425 n.211 (1978–1979) (citing multiple sources); Robert Pitofsky, *Beyond Nader: Consumer Protection and the Regulation of Advertising*, 90 HARV. L. REV. 661, 665 (1977); SUTTON, *supra* note 141, at 313.

Stiglitz argues that the theory of perfect contestability falls with the introduction of almost any element of sunk costs, including advertising. *See* Stiglitz, *Technological Change*, *supra* note 165, at 889–90, 926 (1987) ("[W]hen there is strong ex post competition even small sunk costs act as effective entry barriers.").

Courts also struggle with the issue, but many accept that advertising can constitute an entry barrier. *See, e.g.*, Phototron Corp. v. Eastman Kodak Co., 842 F.2d 95, 100 (5th Cir. 1988) ("Advertising that creates barriers to entry in a market constitutes predatory behavior of the type the antitrust laws are designed to prevent."); Berkey Photo, Inc. v. Eastman Kodak Co., 603 F.2d 263, 287 (2d Cir. 1979) ("A monopolist is not forbidden to publicize its product unless the extent of this activity is so unwarranted by competitive exigencies as to constitute an entry barrier.").

[254] Many commentators dispute the notion that advertising can act as an entry barrier. *See, e.g.*, EKELUND & SAURMAN, *supra* note 249, at 85; J.J. LAMBIN, ADVERTISING, COMPETITION, AND MARKET CONDUCT 117 (1976).

The more general question regarding the correlation between advertising levels and market concentration is similarly controversial with many conflicting studies having been published. *See generally* ROTZOLL & HAEFNER, *supra* note 248, at 79 (noting disparate results of several studies); SCHMALENSEE, *supra* note 249, at 220 (same).

Comanor and Wilson clearly believe that advertising can increase concentration. *See* William S. Comanor & Thomas A. Wilson, *Advertising and Competition: A Survey*, 17 J. ECON. LITERATURE 453, 473 (1979) ("[T]he primary conclusion to be drawn from the empirical literature is that heavy advertising does contribute to high levels of market power in some industries."). They nonetheless qualify their policy recommendations: "To the extent that consumer information is increased in the same process that monopoly power is attained, we may be unwilling to adopt specific policy measures directed against the latter for fear of adversely affecting the former." *Id.* Because fraudulent vaporware announcements do not increase consumer information, Comanor and Wilson have no reason to worry about injury to consumer welfare in this context.

[255] *See* Thomas T. Nagle, *Do Advertising-Profitability Studies Really Show that Advertising Creates a Barrier to Entry?*, 24 J.L. & ECON. 333, 349 (1981) (concluding that advertising lowers rather than raises barriers); Jeffrey P. Singdahlsen, Note, *The Risk of*

advertising costs are much greater, perhaps twice as much,[256] for the entrant to attempt to introduce a product than for the incumbent to maintain a current product's position.[257] This cost differential gives the incumbent a large advantage in this critical area, even if economies of scale are absent.[258]

By such means incumbents can also convince potential entrants that entry will lead to a competitive marketplace with low post-entry prices even if the incumbent's pre-entry prices are high. Thus, "firms, through their own efforts, can deter entry and protect market power."[259]

Chill: A Cost of the Standards Governing the Regulation of False Advertising Under Section 43(a) of the Lanham Act, 77 VA. L. REV. 339, 376 (1991). Product differentiation has also been touted as lowering entry barriers. Arthur, *supra* note 222, at 35 n.162.

256 *See* J.O. Peckham, *Can We Relate Advertising Dollars to Market Share Objectives?*, *in* HOW MUCH TO SPEND FOR ADVERTISING? 30 (M.A. McNiven ed., 1969) (recommending that, as a rule of thumb, the new brand should be advertised at twice the rate necessary to maintain an incumbent brand), *cited in* ROTHSCHILD, *supra* note 172, at 619-20.

257 *See* S. WATSON DUNN & ARNOLD M. BARBAN, ADVERTISING: ITS ROLE IN MODERN MARKETING 319 (1986) (noting that it costs more to launch a new product than to maintain an old one); Dan Horsky & Leonard S. Simon, *Advertising and the Diffusion of New Products*, 2 MARKETING SCIENCE, Winter 1983, at 1, 15. ("[T]he firm should advertise heavily in the initial periods, informing all innovators early about the existence of a new product."); ICHBIAH & KNEPPER, *supra* note 14, at 209 (noting "importance of marketing in general and promotion in particular in determining the rate at which a new product or process gains market acceptance"); W. Duncan Reekie, *Some Problems Associated with the Marketing of Ethical Pharmaceutical Products*, 19 J. INDUS. ECON. 33 (Nov. 1970); C.H. SANDAGE ET AL., ADVERTISING THEORY AND PRACTICE 487 (10th ed. 1979) ("The introduction of a new product generally requires heavier advertising."); DON E. SCHULTZ, STRATEGIC ADVERTISING CAMPAIGNS 252 (3d ed. 1990) ("[E]stablished products require only maintenance advertising schedules . . . [which] can be much less expensive than a campaign designed to introduce the brand and initiate first-time trial."); SUTTON, *supra* note 141, at 313-14.

Additionally, because of its special characteristics and strategic possibilities, it is a mistake to treat advertising as simply another cost of production that is the same for entrants as incumbents. Mensch & Freeman, *supra* note 162, at 348-49.

258 For many products, advertising expenditures in excess of revenues must be incurred to have a realistic chance of successful introduction. *See* WILLIAM H. BOHLEN, ADVERTISING 454 (2d ed. 1984) ("The expected payout [to establish a new product] may be such that profits from the product may take several years to equal the initial investment in advertising."); SANDAGE ET AL., *supra* note 257, at 125 ("Building brand awareness, inducing trial and gaining distribution in retail outlets require heavy advertising and promotion expenditures—expenditures so great that it is not uncommon for them to exceed income, thereby resulting in a loss the first year.").

259 Baker, *supra* note 138, at 652.

Fourth, while there are typically few entry barriers in markets for homogenous goods, this is not the case for heterogeneous goods with varying consumer preferences. The same constraints, discussed earlier, that minimize the ability of deceived customers to punish their deceivers by switching to another company's products serve as entry barriers for new firms. For example, in the computer industry, an installed base advantage often arises for the dominant firm.[260] Any operating system such as DR-DOS or IBM's OS/2 that Microsoft pushes out of the market, for example, is unlikely to regain significant market share due to network externalities.[261]

Once a consumer has chosen a Microsoft operating system and purchased software designed for that system, the consumer will have substantial reason not to switch to an alternative operating system, even if it is proven to be technically superior.[262] Because of the benefits flowing from standardization, "if consumers expect a seller [such as Microsoft] to be dominant, then consumers will be willing to pay more for the firm's product, and it will, in fact, be dominant."[263] Standardization and attendant

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[260] *See* Joseph Farrell & Garth Saloner, *Installed Base and Compatibility: Innovation, Product Preannouncements, and Predation*, 76 AM. ECON. REV. 940–41 (1986) (stating that large installed base may constitute a barrier to entry).

[261] *See* Hanna, *supra* note 7, at 444. Network externalities arise, of course, where the value of a product increases with the number of customers. *See* BAND & KATOH, *supra* note 107, at 40.

[262] Many observers attribute the success of Microsoft's operating systems software to these factors rather than to their superiority as products. Lohr, *Business to Swift*, *supra* note 191, at E3.

> [T]here is a logic to why some products become industry standards even when they are not necessarily superior to alternatives. Initially, the product may have benefited from more aggressive marketing or missteps by rivals. Later, the advantages of being ahead snowball, insuring that consumers flock to the leader.
>
> Microsoft's Windows, which was introduced in 1985, has certainly been a beneficiary of that logic. Microsoft sold its software far more successfully than Apple to companies, the big growth market for personal computers until recently. As its dominance grew, Microsoft's operating system became the standard that more and more software applications, from word processing to E-mail, were written to run on, which in turn attracted more users. A major advantage to using Windows was that "everybody else was"—inferior or not, it became the common language of computing.

Id.

[263] Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 AM. ECON. REV. 424, 425, 439 (1985); *see also* Besen & Farrell, *supra*

network externalities, many believe, can create "excess inertia" and thereby trap an industry in an obsolete or inferior technology.[264]

The same is true of applications software markets.[265] The major cost of software to businesses is the cost of training employees to use the software.[266] Once employees have been trained on a particular company's brand of software, a problem of excess inertia arises which will deter companies from switching to newer, even superior, products.[267] The same applies to consumers.

Since individual consumers and other firms need to invest time and money in acquiring skills specific to the industry standard (*e.g.*, learning how to use Microsoft Windows), they get "locked in." As switching

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note 188, at 119 ("When buyers expect network benefits from one firm's product that other firms cannot provide, a large discrepancy in value is created which the fortunate firm may be able to extract as profit."); Katz & Shapiro, *Systems Competition*, *supra* note 249, at 94 ("[S]ystems that are expected to be popular—and thus have widely available components—will be more popular for that very reason."); Michael L. Katz & Carl Shapiro, *Technology Adoption in the Presence of Network Externalities*, 94 J. POL. ECON. 822, 824 (1986) ("[A] given product is more attractive the larger is the in-place base of consumers using that product . . . ."); David J. Teece, *Information Sharing, Innovation, and Antitrust*, 62 ANTITRUST L.J. 465, 474 (1994) ("[O]nce the installed base achieves critical mass, both core and complement producers join the bandwagon, often driving the rapid adoption of a new design . . . .").

[264] *See* Besen & Farrell, *supra* note 188, at 118–19 ("Because buyers want compatibility with the installed base, better products that arrive later may be unable to displace poorer, but earlier standards."); Joseph Farrell & Garth Saloner, *Standardization, Compatibility, and Innovation*, 16 RAND J. ECON. 70, 81 (1985); Joseph Kattan, *Market Power in the Presence of an Installed Base*, 62 ANTITRUST L.J. 1, 6 (1993) [hereinafter Kattan, *Market Power*] ("The existence of network externalities can, in turn, create a lock-in effect because of the costs associated with abandoning the network. In addition to abandoning the durable good itself, installed owners may have to abandon their sunk investment in complementary assets, which may be either goods or technology-specific training.").

[265] One situation where sunk costs increase the consumer's cost of switching to a new product exists where a durable good has a relatively low resale value. Obviously, computer software fits that standard, so that "customers with sunk investment in software and employee training may not abandon a computer standard in response to an unanticipated small but significant price increase in the price of an operating system update." Kattan, *Market Power*, *supra* note 264, at 11.

[266] David Churbuck & Beth Freedman, *Suits Against 1-2-3 Imitators May Have Wide User Impact*, PC WK., Jan. 20, 1987, at 1, 6 (quoting Wayne Maples).

[267] *See* Kattan, *Market Power*, *supra* note 264, at 6–7, 12; Menell, *supra* note 207, at 1070.

systems means learning new skills, would-be entrants face a considerable entry barrier.[268]

This argument should not be overstated. While the market has some rusty hinges, it is generally efficient. Obviously, businesses and consumers often change applications software, and occasionally switch operating systems software and even hardware.[269] Furthermore, very recent literature poses a substantial attack upon the existence and implications of the theory of network externalities.[270] Nonetheless, the interrelated phenomena of

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[268] *See Thoroughly Modern Monopoly*, ECONOMIST, July 8, 1995, at 76 (in contrast, also cautioning trustbusters who may be mistaken in thinking they can improve upon the decisions made by the market).

[269] Wiley has made the point that "[a]dvancing technology can turn even physically durable goods into economic perishables." John Shepard Wiley, Jr. et. al., *The Leasing Monopolist*, 37 UCLA L. REV. 693, 724 (1990).

[270] *See generally* Lopatka & Page, *Microsoft*, *supra* note 7, at 335–55; S.J. Liebowitz & Stephen E. Margolis, *Network Externality: An Uncommon Tragedy*, 8 J. ECON. PERSP. 133 (1994) [hereinafter Liebowitz & Margolis, *Uncommon Tragedy*]; S.J. Liebowitz & Stephen E. Margolis, *Path Dependence, Lock-In, and History*, 11 J.L. ECON. & ORG. 205 (1995); S.J. Liebowitz & Stephen E. Margolis, *Should Technology Choice Be a Concern of Antitrust Policy?*, 9 HARV. J.L. & TECH. 283 (1996).

Lopatka and Page take arguments developed by Liebowitz and Margolis, *Uncommon Tragedy*, and apply them directly to the Microsoft case. They make a very strong argument, but it is not convincing in all its details. Among the points they make are the following:

First, they observe that increased production coupled with a decline in prices may indicate only that technological advances have caused a reduction in prices, not that there are economies of scale in a given market. *See* Lopatka & Page, *Microsoft*, *supra* note 7, at 341. While this is true in the abstract, it does not overcome the specific evidence that there are economies of scale in the operating systems and applications software markets.

Second, they note that "the assumption of inexhaustible scale economies may not be warranted if the product is differentiated" because "[s]ome consumers may value certain features of an operating system and other consumers value different features." *Id.* at 342. Again, this proposition is accurate as far as it goes, but does not deny that many consumers who value features of, say, the Macintosh GUI operating system more than the features of Microsoft Windows will nonetheless rationally choose the latter product because of network externalities (*e.g.*, greater variety of software and greater ability to find compatible systems). To repeat earlier evidence, ever since its introduction Macintosh has been rated technically superior to any Microsoft product ever produced, yet Apple now has about 4% of the operating systems market and Microsoft has about 90%.

Third, Lopatka and Page challenge what they perceive to be an important part of network externalities literature—the notion "that markets can be tipped by trivial events, by historic accident, so to speak." *Id.* at 342. They disagree with the conclusion that such tipping, coupled with externalities, can lead to dominance in the market of inferior technologies. *See id.* at 347. Their argument is very strong, supported by many examples of where new technologies did displace old technologies (which does not negate the fact that

absent network externalities, more new technologies might have displaced old technologies) and by disputing various supposed examples of situations where inferior technologies came to dominate the market (for example, the QWERTY typewriter keyboard). Even the strongest proponents of network externality theory, Katz and Shapiro, admit that "it is abundantly clear that many, new incompatible technologies are in fact successfully introduced." Katz & Shapiro, *Systems Competition*, *supra* note 249, at 108. On the other hand, there is substantial literature supporting the tipping phenomenon. *See* W. Brian Arthur, *Positive Feedbacks in the Economy*, SCIENTIFIC AMERICAN, Feb. 1, 1990, at 92, 94; W. Brian Arthur, *Competing Technologies, Increasing Returns, and Lock-In by Historical Events*, 99 ECON. J. 116 (1989); Besen & Farrell, *supra* note 188, at 118. The very success of the Microsoft operating system can be argued to have stemmed from a trivial event which tipped the market—IBM's selection of Microsoft to provide the operating system for its personal computers. As noted earlier, this decision had nothing to do with the merits or efficiency of Microsoft, which didn't even have an operating system at the time. Furthermore, a strong case can be made that Microsoft's operating systems dominance is an example of inferior technology dominating the market, for, as noted several times earlier, most computer experts view the pre-Windows 95 operating systems of Microsoft—those that came to dominate the world—as inferior to Apple's Macintosh, inferior to IBM's OS/2, and inferior to Novell's DR-DOS. Therefore, Microsoft's "acceptance in the market may merely reflect the absence of viable choice available to the consumer or an overwhelming familiarity with the monopolist's product or service." Kapen, *supra* note 167, at 1067; John Andrew Maher, Comment, *Draining the Alcoa "Wishing Well": The Section 2 Conduct Requirement After* Kodak *and* Calcomp, 48 FORDHAM L. REV. 291, 324 (1979); *see also* Shepherd, *Economic Analysis*, *supra* note 232, at 927–28.

There is substantial evidence that the best product does not always win in the marketplace. *See* Besen & Farrell, *supra* note 188, at 118 ("[An] inferior product may be able to defeat a superior one if it is widely expected to do so."); Lohr, *Business to the Swift*, *supra* note 191, at E3 (quoting Stanford University's Paul A. David as saying: "It's naive to believe that [the most] efficient engineering solutions [always] win in the marketplace. That view is not supported by the study of history."). There is always substantial evidence that the dominant firm is not always the most efficient. *See* William G. Shepherd, *Antitrust Repelled, Inefficiency Endured: Lessons of IBM and General Motors for Future Antitrust Policies*, 39 ANTITRUST BULL. 203, 204, 222 (1994) (arguing that performances of IBM and General Motors debunk the "efficient-structure" hypothesis "that a firm can have a high market share only if the firm attains superior performance"); Shepherd, *Economic Analysis*, *supra* note 232, at 920, 927–28 (stating that market imperfections often allow dominance by firms with only average or below average efficiency).

At the same time, there are many reasons to believe that "tipping" does not provide the complete story, or anywhere near it, for Microsoft's evolving dominance. *See* Daniel J. Gifford, *Microsoft Corporation, the Justice Department, and Antitrust Theory*, 25 SW. U.L. REV. 621, 647–52 (1996).

Fourth, Lopatka and Page argue that even if there are tremendous economies of scale and the operating systems market is a natural monopoly, the market should decide who the monopolist will be (Microsoft or IBM, for example), and the market, aided by technological

sunk costs, installed base,[271] network externalities,[272] and related concepts[273] seem to combine logically to create the potential for significant

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change, can turn natural monopolies into competitive markets. *See* Lopatka & Page, *Microsoft*, *supra* note 7, at 349. Other things being equal, this proposition is also true. But if the natural monopolist uses numerous anticompetitive strategies and tactics, such as fraudulent vaporware marketing, to maintain its position, that technological change may not overcome the monopoly. The example given by Lopatka and Page, long-distance telecommunications service, brings to mind the fact that AT&T became a much more efficient and competitive company after it was "de-monopolized" not by technological change but by antitrust action. Professor Shepherd delights in reminding readers how well AT&T has done since Judge Harold Greene massively restructured it in comparison to IBM's relatively apathetic performance since the Reagan Justice Department dismissed the IBM antitrust case in 1981. *See* Shepherd, *Economic Analysis*, *supra* note 232, at 932–36.

A minor point made by Lopatka and Page may be their most telling. Essentially, they explain that when Microsoft issues a new version of its software (*e.g.*, Windows 95), it gives up, to some extent, its advantages grounded in the installed base/sunk costs/network externalities triad. Consumers must give up their old Windows 3.1 to go to Windows 95, and they must then learn the new system. "The Windows 3.1 user may find the difference between learning [the new version of Windows] and learning a new system from scratch negligible." Lopatka & Page, *Microsoft*, *supra* note 7, at 350. This point is valid, although one may generally assume that another iteration of Company A's previous product will be easier to learn than Company B's competing product. Additionally, just as a matter of consumer psychology, customers are more willing to accept a new "brand extension" than a completely new product put out by a different company. *See* D. JOHN LODEN, MEGABRANDS 9–10 (1992) ("Today's marketplace is openly hostile to most new products; but it is extremely receptive to major brand-line extension[s].").

Finally, Lopatka and Page ignore substantial empirical evidence supporting the network externalities theory. *See, e.g.*, Neil Gandal, *Competing Compatibility Standards and Network Externalities in the PC Software Market*, 77 REV. ECON. & STAT. 599 (1995); Neil Gandal, *Hedonic Price Indexes for Spreadsheets and an Empirical Test for Network Externalities*, 25 RAND J. ECON. 160 (1994); Shane M. Greenstein, *Did Installed Base Give an Incumbent Any (Measurable) Advantages in Federal Computer Procurement?*, 24 RAND J. ECON. 19 (1992). While academicians continue to debate these issues, businesspeople have clearly rejected the arguments of Lopatka and Page. Instead, rightly or wrongly, they have embraced the notions underlying the research of Professor Arthur and others that are accepted in this Article. *See* G. Christian Hill et al., *Bloody Price Wars and Strategic Errors Hammer Tech*, WALL ST. J., July 12, 1996, at A1.

[271] The Supreme Court recognized the installed base factor in *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451 (1992), when it noted that locked-in customers "will tolerate some level of service-price increases before changing equipment brands." *Id.* at 476.

[272] *See generally*, BAND & KATOH, *supra* note 107, at 40–43 (explaining network externalities and why restraining factors such as standards bodies and antitrust law which

entry barriers, and this logic is supported by studies showing that businesses strongly tend to buy the same brands of computers and software over and over.[274]

Finally, as noted above,[275] there is a substantial body of literature arguing that it makes rational economic sense for a monopolist to predate in a particular market in order to deter entrance in other markets where it operates.[276] A company such as Microsoft that enjoys a widespread

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historically work against monopolization of standards have not worked in the software industry).

[273] Another related factor that impedes consumers' ability to switch products and therefore enhances entry barriers is that of simple transaction costs, including the costs of evaluating and acquiring the competing product. *See* Kattan, *Market Power*, *supra* note 264, at 11–12.

There may exist miscellaneous switching costs as well that differentiate products after the purchase even though they may have been perfect substitutes for one another before the purchase. *See* Paul Klemperer, *The Competitiveness of Markets with Switching Costs*, 18 RAND J. ECON. 138 (1987); Paul Klemperer, *Markets with Switching Costs*, *supra* note 206. Computer software is a perfect example.

[274] One study shows that 80% of the time companies that buy new computers buy the same brand they are replacing. *See* Severin Borenstein et al., The Economics of Customer Lock-in and Market Power in the Service Business 7 (unpublished manuscript *cited in* Kattan, *Market Power*, *supra* note 264, at 12–13 n.44). Another study indicates that the installed base phenomenon gives incumbent manufacturers a measurable advantage in federal computer procurement bidding contests. *See* Shane M. Greenstein, *supra* note 270, at 38.

[275] *See supra* note 186 and accompanying text.

[276] *See* George A. Hay, *A Confused Lawyer's Guide to the Predatory Pricing Literature*, *in* STRATEGY, PREDATION, AND ANTITRUST ANALYSIS 155, 160–61 (S. Salop ed., 1981), explaining the mechanics of reputational predation:

> It can be argued that it pays a firm to absorb losses even beyond what it could ever expect to recoup in the market at hand, if by doing so this firm will establish a credible threat to pursue the same policy in any market in which an entrant appears. If the threat is truly credible, it need not be exercised beyond the first time, since future would-be entrants will elect not to challenge the monopolist, figuring it is a hopeless cause. To make this model work, requires only good information (i.e., the story of the predation in the first market has to be communicated to the future would-be entrants), and some nontrivial costs of entry and exit (so that unsuccessful entry attempts are not costless).

Id.; *see also* DOUGLAS G. BAIRD ET AL., GAME THEORY AND THE LAW 182–83 (1994) (using game theory to explain rationality of reputation-based predation model); HOVENKAMP, *supra* note 104, at 306 (discussing "multiple-benefit predation"); SCHERER, *supra* note 162, at 338; TIROLE, *supra* note 53, at 376–77; WILLIAMSON, ANTITRUST ECONOMICS, *supra* note 139, at 342; Adams & Brock, *Somnambulance*, *supra* note 138, at 827, 859

reputation as an aggressive competitor and operates in several markets should be more able than most firms to succeed at strategic entry deterrence through reputation predation.[277]

The operating systems market seems to provide a vivid illustration of the points made in this Section. IBM, one of the most powerful corporations in the history of the world, sought to invade Microsoft's domain with a competing system, OS/2, that was generally reviewed as technically superior to any product that Microsoft had on the market at the time (Windows and MS/DOS) or was even promising to put on the market in the foreseeable future (Windows 95).[278] Despite spending more than a

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(explaining theory of reputation predation and giving specific examples); Baker, *supra* note 138, at 649 (citing numerous sources); Fox & Sullivan, *supra* note 235, at 74; George A. Hay, *The Economics of Predatory Pricing*, 51 ANTITRUST L.J. 361, 365 (1982) (discussing predatory pricing based on the reputational effects of the predator firm); Balder von Hohenbalken & Douglas S. West, *Empirical Tests for Predatory Reputation*, 19 CAN. J. ECON. 160, 176–77 (1986) (presenting empirical study suggesting that under certain conditions predation is a successful entry-deterring strategy); David M. Kreps & Robert Wilson, *Reputation and Imperfect Information*, 27 J. ECON. THEORY 253, 275 (1982); Paul Milgrom & John Roberts, *Predation, Reputation, and Entry Deterrence*, 27 J. ECON. THEORY 280, 281, 303 (1982); B.S. Yamey, *Predatory Price-Cutting: Notes and Comments*, 15 J.L. & ECON. 129 (1970). *See generally* Fudenberg & Tirole, *supra* note 139.

Reputational effects can occur in both single market cases and multiple market cases. It has been argued that such effects are most likely to occur when the predator's size comes from selling closely related products in the national market, *see* SCHERER, *supra* note 162, at 338, as does Microsoft.

Others remain critical of the reputational predation theory, in part because in the context of *price* predation, it arguably would not work unless the predator actually had lower costs than the potential entrant. *See, e.g.*, Campbell, *supra* note 138, at 1625; Easterbrook, *Predatory Strategies*, *supra* note 13, at 282–83. However, in the nonprice vaporware context, the predator need not have lower costs than the potential entrant to benefit from reputational predation.

[277] One final argument on entry barriers deserves attention. Judge Easterbrook argues that if a predator does drive a small competitor out of business, a larger and better-financed competitor could buy the assets of the small competitor and enter the market, preventing the predator from reaping monopoly advantage over any long term. *See* Easterbrook, *Predatory Strategies*, *supra* note 13, at 271. Easterbrook makes this argument in explaining why recoupment is unlikely to actually occur in a predatory pricing case. Because vaporware marketing is not costly to the predator in the short run, and because any such larger and better-financed competitor would face the same installed base/sunk costs/network externalities barriers as the defunct small competitor, this argument carries less weight in the vaporware context.

[278] *See supra* note 108.

billion dollars,[279] IBM failed miserably.[280] There may be many lessons in this story, but one of them is surely that, economic theorizing aside, it is not easy to enter into new markets dominated by as fierce a competitor as Microsoft even in the fluid high-tech arena.

4. *Assessment of Any Overriding Efficiencies Identified by the Putative Predator As Justifying the Behavior*

Chicago School economists tend to argue that the newer nonprice predation theories, such as predatory product innovation, predatory investment, and predatory research and development, improperly condemn these activities which generate much social good.[281] It is widely believed that efficient behavior should not be punished under the antitrust laws, even if it damages competition. Indeed, experts in RRC theory readily admit that RRC tactics are not necessarily illegal just because they injure competitors.[282] Rather, "[p]articular attention must be given to the potential efficiencies of alleged anticompetitive RRC activities."[283]

Many legitimate reasons for preannouncing high-tech products were discussed earlier in this Article.[284] However, when, as in Scenario #1, a large, high-tech company willfully misleads consumers, dealers, investors, and others for the purpose of discouraging consumers from purchasing a rival's products, there is no countervailing value to the competitive system.

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[279] IBM spent at least a billion dollars promoting OS/2. *See* Baseman et al., *supra* note 89, at 270. Yet, it runs on only 8% of United States home PCs and is about to suffer substantial losses in its battle with Windows NT for the corporate market. *See* Bart Ziegler, *IBM's Rival OS/2 Focusing on Same Market Niche Already Is Struggling*, WALL ST. J., Aug. 24, 1995, at B9.

[280] *See* Laurence Zuckerman, *supra* note 108, at F1 (reporting that IBM CEO Louis Gerstner apparently admitted "that IBM has failed in its multibillion-dollar attempt to establish an alternative to Microsoft Corp.'s stranglehold on the software that runs personal computers.").

[281] *See* Arthur, *supra* note 222, at 42; Krattenmaker & Salop, *supra* note 168, at 219 ("[C]ritics argue that what the courts have called anticompetitive exclusionary conduct is in fact efficient behavior that, if successful in increasing market shares, should be replicated by competitors rather than prevented by courts.").

[282] Antitrust law protects competition, but not individual competitors. *See* Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc., 429 U.S. 477, 488 (1977); Great W. Directories v. S.W. Bell Tel. Co., 74 F.3d 613, 615 (5th Cir. 1996).

[283] Scheffman, *supra* note 179, at 205.

[284] *See supra* notes 30–42 and accompanying text.

As Professor Cooper has noted, "It is extraordinarily hard to conjure up the [legitimate] competitive advantages of deliberate fraud."[285]

False advertising subverts efficiency. It misleads consumers and thereby deforms the market, causing a misallocation of resources.[286] By injuring legitimate competitors and giving market power to deceivers, fraudulent vaporware marketing can injure even consumers who were not misled.[287] It further damages the cause of efficiency by "lead[ing] consumers to disregard valuable and truthful information and [to] rely on more expensive, time-consuming product searches."[288] In all these ways, fraudulent vaporware marketing injures the process of fair competition.[289] In both the short run and the long run, it can cause reduced output.[290]

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[285] Edward H. Cooper, *Attempts and Monopolization: A Mildly Expansionary Answer to the Prophylactic Riddle of Section Two*, 72 MICH. L. REV. 373, 416 (1974).

[286] *See* Goldman, *supra* note 201, at 492–94; Schechter, *Gullible Consumer*, *supra* note 204, at 584; Roger Schechter, *Letting the Right Hand Know What the Left Hand's Doing: The Clash of the FTC's False Advertising and Antitrust Policies*, 64 B.U. L. REV. 265, 323 (1984) [hereinafter Schechter, *Left Hand*] (pointing out that the FTC, by issuing disparate orders to advertising competitors, can alter structure of the market).

[287] *See* Craswell, *supra* note 196, at 686–87.

> Deception can have significant impact on consumer welfare by affecting competition. For example, deceptive advertising might differentiate one firm's products from those of its competitors, thus giving the advertiser some form of market power and leading to price increases that would injure all consumers, whether they were deceived or not.

Id.

[288] Burns, *Paradox*, *supra* note 216, at 85 & n.157 (citing numerous sources); Pitofsky, *supra* note 253, at 671 ("In markets where product claims are viewed with utter suspicion, high price is adopted as an indication of quality and price competition and product improvement become economically irrational.").

[289] *See* BeVier, *supra* note 218, at 8 ("Whereas *truthful* advertising facilitates competition, false advertising impedes it.").

[290] Judge Easterbrook believes that most exclusionary conduct is justified as efficient. Regarding RRC, he argues that when it occurs, the price in the market will rise at once, and total output will fall, but the predator's share of the output will rise. *See* Easterbrook, *On Identifying*, *supra* note 13, at 974. Therefore, Easterbrook argues, RRC activity can only be proven by showing a decrease in total output. However, Krattenmaker and Salop point out that (a) the "output" test proffered by Easterbrook fits industry-wide collusion cases, but has little applicability to single firm monopoly cases, and (b) the test was designed to evaluate vertical restraints and consequently would not apply to the horizontal vaporware case. *See* Krattenmaker & Salop, *supra* note 168, at 283–84.

Easterbrook's output test has been roundly criticized elsewhere. *See, e.g.*, Eleanor M. Fox, *The Modernization of Antitrust: A New Equilibrium*, 66 CORNELL L. REV. 1140, 1160–

Thus, because false vaporware marketing generates no social benefits,[291] condemning it raises none of the difficult questions surrounding other alleged nonprice predation practices.[292] No efficiencies can be persuasively claimed for fraudulent vaporware announcements,[293] so this consideration should not protect the activity from antitrust scrutiny.

C. *Analyzing Nonprice Predation Criticisms of Fraudulent Vaporware Marketing Theory*

As noted earlier, there are five relevant criticisms of the post-Chicago theories of nonprice predation that should be considered as they relate to fraudulent vaporware marketing.

1. *Is Nonprice Predation Theory a Genuine Departure from Current Analytical Approaches?*

Some have argued that although nonprice predation models offer useful insights into relevant issues, they do not really add much to traditional

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62, 1172–74 (1981) (arguing that antitrust law should focus on preserving competitive processes rather than locking the law into the artificial theoretical constructs of economists); Williamson, *Delimiting Antitrust*, *supra* note 13, at 285.

Professor Gerla believes that false advertising, of which vaporware is a variety, does indeed reduce output through demand shift. *See* Gerla, *Federal Antitrust*, *supra* note 171, at 1054–62. This belief seems accurate. At least during the time that the public is waiting fruitlessly for the vaporware promise to be fulfilled, it will stop buying the competitor's product, reducing demand and therefore output. The competitor will also incur extra expenses in advertising to compete with its new vaporous rival, which will have the effect of raising its prices and thereby further reducing demand and output. In the long run, the predator, if successful in severely damaging its competitor, can raise prices and again reduce output. *See id.* at 1062–63.

[291] False advertising, such as fraudulent vaporware announcements, causes economic loss. *See* Gerla, *Federal Antitrust*, *supra* note 171, at 1030 ("False or misleading information is a deadweight economic loss, causing injury without any offsetting economic benefit."); E. Thomas Sullivan, *On Nonprice Competition: An Economic and Marketing Analysis*, 45 U. PITT. L. REV. 771, 791 & n.101 (1984).

[292] Even Judge Bork believes that some activity, such as disturbing optimal patterns of distribution, can constitute exclusion and predation. *See* BORK, *supra* note 135, at 156. However, he believes that such tactics are generally counterproductive when the predator will incur substantial added costs. *See id.* However, vaporware marketing imposes no such additional costs, at least in the short run.

[293] *See* BeVier, *supra* note 218, at 14 ("False advertising . . . is unequivocally bad. It increases uncertainty and impedes informed decision making.").

analysis.[294] This Article accepts this criticism, for the ultimate argument made here is not that fraudulent vaporware marketing can only be recognized as an antitrust violation by application of an innovative new nonprice predation theory. Rather, the argument made here is simply that fraudulent vaporware marketing can constitute monopolizing behavior under section 2 of the Sherman Act. Whether this conclusion is demonstrated via traditional analysis or via adoption of "new" nonprice predation theory is irrelevant.

Although fraudulent vaporware marketing arguably fits squarely into the mainstream of post-Chicago nonprice predation theory, this Article's ultimate argument is strengthened by the fact that the practice also clearly meets traditional tests for monopolizing conduct. Three examples should make the point.

a. *Professor Sullivan's "Jarring or Unnatural Test"*

Similar, but not identical, definitions of monopolizing conduct have traditionally been offered by antitrust law's leading commentators. Professor Sullivan suggests a sort of "I know it when I see it" definition for predatory practices.

According to Professor Sullivan's definition, predatory conduct will usually display two identifying characteristics. First, there will be something odd, something jarring or unnatural seeming about it. It will not strike the informed observer as normal business conduct, as honestly industrial. Second, it will be aimed at a target, at an identifiable competitor or potential competitor, or at an identifiable group of them.[295]

To take the second element first, as assumed in the hypothetical and as allegedly practiced by Microsoft and others, fraudulent vaporware product announcements are often aimed at a specific competitor or competitors who have marketed or are introducing specific products. Thus, the second element of Sullivan's test for anticompetitive or predatory conduct is easily satisfied.[296]

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[294] *See, e.g.*, Timothy Brennan, *Understanding "Raising Rivals' Costs,"* 33 ANTITRUST BULL. 95, 113 (1988) ("RRC explains little that cannot already be understood through careful application of the conventional and proven horizontal market paradigm in antitrust analysis.").

[295] *See* LAWRENCE A. SULLIVAN, ANTITRUST § 43, 111–12 (1977).

[296] Examples include Microsoft's 1982 and 1983 vaporware announcements aimed at blunting sales of VisiCorp's VisiOn software and its 1986 preannouncement to hold off purchasers of Borland Corporation's Turbo Basic software. *See supra* notes 70–77, 84–86 and accompanying text.

To examine the first element of the Sullivan test, it is obvious that fraudulent vaporware marketing is a form of false advertising. Fraudulent vaporware marketing does not, in Sullivan's words, "strike the informed observer as normal business conduct, as honestly industrial."[297] Rather, false advertising is simply unethical.[298]

Although the evidence described earlier in this Article indicates that fraudulent vaporware marketing is often used in high-tech industries, these industries, thankfully, have not so completely lost their moral compass that the practice is openly embraced.[299] Instead, fraudulent vaporware marketing remains so jarring and unnatural that even its most infamous practitioners deny that they ever engage in the practice even as they point fingers at their competitors and moan that the practice is ubiquitous in the industry. Indeed, a few industry groups have adopted codes of ethics in a thus-far futile attempt to minimize the practice.[300] Only in response to confidential surveys by academics have they admitted to the practice.

Application of the "jarring or unnatural" test focuses analysis of fraudulent vaporware marketing upon the ethical and fairness aspects of antitrust law.[301] The practice is neither ethical nor fair. It is "jarring" and

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[297] SULLIVAN, *supra* note 295, § 43, at 111–12.

[298] *See* 1A RUDOLF CALLMAN, UNFAIR COMPETITION, TRADEMARKS AND MONOPOLIES § 5.14, at 88–89 (4th ed. 1993) ("A seller who, by means of false advertising, obtains a business contact which he can exploit, acquires an undeserved advantage over his more ethical competitors."); RICHARD T. DEGEORGE, BUSINESS ETHICS 277 (2d ed. 1986) ("If an ad makes a false claim, which the advertiser knows to be false, for the purpose of misleading, misinforming, or deceiving potential customers, then the ad is immoral."); THOMAS M. GARRETT & RICHARD J. KLONOSKI, BUSINESS ETHICS 106 (2d ed. 1986) (arguing that false advertising's distortion of market price paid by consumers is only one reason to condemn it as immoral); Goldman, *supra* note 201, at 494 ("Society's moral and ethical standards are diminished if false advertising is accepted as a standard business practice.").

[299] Unfortunately, some members of the industry have adopted the "everybody does it" view of business ethics. For example, one Microsoft apologist has written that "[i]t's hard to see how anyone can police 'vaporware' announcements; telling the truth has never been a tradition in the software industry." Morris, *supra* note 240, at B5.

[300] *See infra* note 371 and accompanying text. Vaporware concerns have also led some computer societies to refuse to allow companies to demonstrate products that are not already being shipped. *See* Jenkins, *supra* note 159, at 10.

[301] Although economic analysis dominates antitrust law today, principles of fairness and equity should not be totally ignored. *See* Edwin J. Hughes, *The Left Side of Antitrust: What Fairness Means and Why It Matters*, 77 MARQ. L. REV. 265, 283 (1994) ("Once the law abandons its role of protecting the fairness and legitimacy of the competitive process, that process becomes more prone to random acts of anticompetitive violence. Such a policy discourages the entrepreneurial activity necessary to stoke the furnaces of the economy.").

"unnatural" conduct aimed at specific competitors; it therefore satisfies Sullivan's definition of monopolizing conduct.

b. *Conduct Is Profit Maximizing Only If It Will Destroy Competition*

Unfortunately, as Hovenkamp recently pointed out, "[n]o court has articulated a general theory of what the rule of reason in monopolization cases is, or how it should function."[302] He suggests that the closest thing to a consensus exists around the notion that conduct is condemnable if it must destroy competition to be profit maximizing.[303] This lens is different, and arguably more rigorous, than the test suggested by Sullivan to evaluate potentially monopolizing conduct, but it provides a standard that fraudulent vaporware marketing seems to satisfy as well.

The fraudulent vaporware marketer certainly faces some damage to long-term reputation when it does not fulfill its promises and predictions. The practice would, therefore, likely be unprofitable if it did not benefit the fraudulent marketer by damaging the competitive process. However, for reasons that were discussed above, the reputational injury likely will not be sufficiently severe to deter a strongly motivated monopolist or would-be monopolist. Even the most rabid proponents of the notion that the marketplace can discipline or correct false advertising admit that there are limits to the market's ability to self-correct and to consumers' abilities to protect themselves from deception.[304] Damage to competitors and the competitive process can outweigh any damage to the predator's reputation, thereby rendering the practice profitable and predatory under this traditional definition.

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302 HOVENKAMP, *supra* note 104, § 6.4a, at 248.

303 *See id.*

304 *See* Burns, *supra* note 216, at 75 n.121.

> [E]ven advocates of [the] theory [that the consumer's conscious or unconscious purchasing decisions act as a powerful self-help remedy that deters false advertising] admit there are limits to the consumer's ability to protect himself, particularly if the seller's interim profits from deception exceed its long-term costs in loss of reputation or if the seller has few repeat customers.
>
> *Id.*

c. *Conduct Is Monopolizing If It Allows a Dominant Firm to Injure Competitors Without Regard for Efficiency*

"Exclusionary" acts are commonly viewed as those which allow a dominant firm to injure competitors without regard to their efficiency.[305] Indeed, the Supreme Court has used this test to define both exclusionary behavior and predation, focusing the analysis upon the suspect conduct's impact on consumers:

> The question whether [defendant's] conduct may properly be characterized as exclusionary cannot be answered by simply considering its effect on [plaintiff competitors]. In addition, it is relevant to consider its impact on consumers and whether it has impaired competition in an unnecessarily restrictive way. If a firm has been "attempting to exclude rivals on some basis other than efficiency," it is fair to characterize its behavior as predatory.[306]

This third way of defining illicit predatory conduct is consistent with the notion, mentioned earlier, that antitrust law is meant to protect competition, but not individual competitors.

The test is also clearly satisfied by fraudulent vaporware marketing, which allows a dominant firm to injure smaller firms by disrupting efficient market processes. Small, efficient firms can be first to the market with innovative new products and yet see their competitive advantage neutralized by a larger competitor's fraudulent vaporware announcement. Large economic entities can use fraudulent vaporware marketing to protect currently held monopoly positions, or to invade and dominate new markets previously controlled by smaller companies.

So, even if nonprice predation theory adds nothing to traditional approaches, the important point to remember is that fraudulent vaporware marketing satisfies three complementary, but slightly different, traditional tests for defining predatory conduct for purposes of section 2 of the Sherman Act.

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305 *See* AREEDA & TURNER, *supra* note 7, ¶¶ 626b–626c.

306 Aspen Skiing Co. v. Aspen Highland Skiing Corp., 472 U.S. 585, 605 (1985), (quoting BORK, *supra* note 135, at 138, and adopting the test suggested in AREEDA & TURNER, *supra* note 7, ¶¶ 626b–626c).

2. *Does the Proposed Theory of Liability Adequately Define Grounds for Liability So As to Preclude Condemnation of Efficiency-Enhancing Conduct?*

As was explained in Part IV.B.4, fraudulent vaporware marketing is undeniably inefficient. Because no efficiencies can be convincingly claimed for fraudulent vaporware announcements, eliminating the practice will surely improve the efficiency of the economy *if* it can be distinguished from nonfraudulent marketing. This differentiation is not easily done, but is feasible, as will be explained presently.[307]

3. *Does Fraudulent Vaporware Marketing Hinge on the Existence of Market Power?*

Critics of nonprice predation in general often argue that such theories hinge on the existence of market power.[308] This dependence, they further contend, limits the applicability of nonprice predation to a relatively small set of circumstances.

Criticisms regarding viability of RRC tactics of the type discussed by Krattenmaker and Salop, like criticisms of other nonprice predation methods, do not generally apply to vaporware. For example, Brennan notes that "[t]o raise rivals' costs, by definition one has to raise their input prices,"[309] which he suggests cannot be accomplished without acquiring power over price in those markets except in unusual cases. But vaporware raises the rivals' costs for promotion and advertising not by raising the costs charged by the rivals' advertising firms (a prototypical example of the type of RRC activity examined by Krattenmaker and Salop), but by forcing the rivals to do a greater volume of advertising in order to sell their product in the face of a vaporous competing product.[310] The greatest

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[307] *See infra* notes 340–76 and accompanying text.

[308] *See, e.g.*, Snyder & Kauper, *supra* note 168, at 564.

[309] Brennan, *supra* note 294, at 99.

[310] Brennan addresses the related notion of raising rivals' costs by increased advertising, conceding that (a) more advertising by one firm may render a rival's advertising less effective; and (b) that to the extent advertising is treated as an input, when the rival's advertising becomes less effective, its costs rise. However, Brennan argues that "[i]f a firm's increased advertising . . . makes efforts by competitors less productive, it may be because consumers prefer the results of these efforts." *Id.* at 102. Obviously, competitive advantage stemming from effective truthful advertising is not usually objectionable even if it raises rivals' costs; however, competitive advantage stemming from fraudulent vaporware marketing remains objectionable.

danger from fraudulent vaporware marketing arises when that tactic is used by firms that dominate their markets. This is not surprising. However, while predatory pricing and many forms of nonprice predation are practicable only for firms with very large market shares, fraudulent vaporware marketing can be used effectively by firms with much smaller market shares.[311]

On the other hand, when used by small firms, fraudulent vaporware marketing can have some anticompetitive effects, but probably nothing (especially in terms of sustained, long-term market power) that rises to the level of a section 2 Sherman Act monopolizing or attempting-to-monopolize violation,[312] because the Supreme Court requires a showing of monopoly power in the former offense and a dangerous likelihood of success in monopolizing in the latter. That requirement is why some acts that are forbidden to monopolists or would-be monopolists with a realistic chance of success are legal for the small fry.[313]

Keep in mind, however, that large firms have sometimes effectively used vaporware marketing to enter a market in which they previously had no market share and thereby trampled smaller, incumbent firms.[314]

4. *Are the Episodes of Conduct Described by the Theory So Rare As to Be Insignificant for Competition Policy Purposes?*

As detailed in Part II, there is ample evidence that fraudulent vaporware marketing is widely used in high-tech marketing. The evidence of a widespread phenomenon of vaporware marketing is much more substantial than for other nonprice predation theories such as product innovation and predatory investment strategies, where there are a few fairly

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311 *See* HOVENKAMP, *supra* note 104, § 6.2b, at 245 (explaining that vexatious litigation can be used by firms with smaller market power). Indeed, given its status, Microsoft could likely announce that it planned to enter a new market with a "new improved" product and substantially freeze the existing competition's sales, even if Microsoft had a zero percent market share at the time of the announcement.

312 *See* Meehan & Larner, *supra* note 224, at 195 ("One point of agreement between the Chicago School and the new school is that single-firm conduct is not likely to restrict competition unless there is preexisting monopoly power."); Oliver E. Williamson, *Delimiting Antitrust*, *in* REVITALIZING ANTITRUST IN ITS SECOND CENTURY, *supra* note 139, at 229 ("High concentration coupled with high barriers to entry are needed" for strategic predatory behavior to succeed.).

313 *See* Meehan & Larner, *supra* note 224.

314 *See supra* note 158 and accompanying text.

well-known asserted examples and elaborately plotted theories and formulas, but no real evidence of a widespread real-world application.

Indeed, the problem for the theory may be not that it happens too infrequently to be significant, but that it may happen too often to be effective. A firm that becomes known for using vaporware marketing at every turn will lose credibility and the tactic will eventually be rendered ineffective. Certainly a Microsoft or an IBM has the reservoir of goodwill and economic power to fail to deliver on vaporware promises fairly often without suffering too much damage. But even firms of their economic heft cannot continuously use fraudulent vaporware marketing with impunity. However, by carefully restraining themselves, and using the tactic only where it promises to make a difference in an important market, such firms seemingly can gain great competitive advantage.

5. *Can the Targets of Vaporware Readily Avail Themselves of Counterstrategies to Defeat the Strategy Without the Need for Antitrust Intervention?*

Counterstrategies for victims of vaporware do not show much potential. The normal reaction to a predatory vaporware announcement is to respond with increased advertising of the target's product. This increased expense is one of the facets of vaporware that raises the rival's costs and thereby injures it. Often the increased advertising is not effective anyway; sales flatten and revenues plunge.

A vaporware target can respond with its own vaporware announcement. However, as noted above, such fraudulent marketing tactics simply work more effectively for a large company like Microsoft or IBM than for their smaller competitors. Smaller companies that engage in vaporware are more likely to self-destruct like Wang or Osborne.

A vaporware target can respond by pointing out, again via increased advertising budgets, that the vaporware promised by the predator may never appear. But, as explained above, a clever vaporware predator who has built up goodwill and used the technique only in especially important market battles will be able to withstand such claims.

Due to imperfect information, the innocent competitor may believe that the fraudulent vaporware marketer really does have a new product on the cusp of being released and therefore may not realize that it is being

predated against. It might not take any countermeasures at all in such situations.[315]

For the above reasons, few effective counterstrategies for the firm victimized by vaporware announcements made by a large competitor are apparent.

In conclusion, fraudulent vaporware marketing meets the four major criteria for discerning nonprice predatory acts. It also withstands the five relevant criticisms. Fraudulent vaporware marketing of the kind hypothesized in Scenario #1 is conduct potentially violative of section 2 of the Sherman Act.

V. INNOCENT VAPORWARE MARKETING AS ANTICOMPETITIVE, EXCLUSIONARY, OR PREDATORY CONDUCT

If fraudulent vaporware marketing should be deemed sufficient to fulfill the conduct element of a section 2 violation, what about an "innocent" incident of vaporware marketing?

Scenario #2: Innocent Vaporware Marketing

Assume that a computer software maker has monopoly or near-monopoly power in a given market. Assume further that a small competitor in that market, say with a 5% market share, begins to market a new product with features well beyond those of the dominant firm's current product. Assume further that the dominant firm immediately issues a press release and announces at a computer trade show that it is currently developing and will market within three months a product that will do everything that the small competitor's product will do. Finally, assume that the dominant firm's officers believe in good faith that they can deliver on the promise, but difficulties in programming defeat their plans. The new product does not reach the market for a year and when it does it lacks several of the features of the small competitor's product.

The incident of innocent vaporware marketing that is illustrated in this hypothetical example raises an issue that is almost as interesting as that raised by fraudulent vaporware marketing. It is also an important issue, given that many commentators believe that there is insufficient evidence

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315 *See* Robert H. Lande, *Chicago Takes It on the Chin: Imperfect Information Could Play a Crucial Role in the Post-*Kodak *World*, 62 ANTITRUST L.J. 193, 201 (1993) [hereinafter Lande, *Chin*] (offering a similar argument in the context of predatory pricing).

that Microsoft has not intended to fulfill its vaporware promises and that, therefore, its announcements are no more than "aggressive marketing."[316] As noted earlier, all practitioners of vaporware pronounce their own good intentions (as they denounce the intentions of their competitors).

A. *Evaluating Innocent Vaporware Marketing*

It can be plausibly argued that innocent vaporware marketing, like the fraudulent marketing discussed in Part IV, can satisfy the conduct element for a section 2 monopolization or attempt-to-monopolize violation. After all, the damage to competitors (and to competition) is the same whether the false announcement was fraudulent or well intentioned. The small software maker whose sales are frozen in the wake of a Microsoft announcement that it will introduce a competing product six months later will likely suffer the same injury whether or not Microsoft believes its own announcement.

Furthermore, many believe that intent should be irrelevant in antitrust law.[317] Vaporware marketing is essentially deceptive advertising which is punishable, at least under the Lanham Act, because of its falsity; the advertiser's bona fides are largely irrelevant.[318]

These arguments notwithstanding, the better view is that innocent vaporware marketing does *not* satisfy the conduct requirement of a section 2 violation. There are several reasons to draw this distinction. First, an innocent vaporware announcement is not immoral and therefore is not "abnormal or jarring" in the same sense as a fraudulent announcement. It is, rather, a "normal business practice" that is commercially justified. As was discussed at length in Part II.B, such preannouncements, among other functions, can serve to provide valuable information to dealers and consumers about the availability and features of future products, can stimulate and facilitate the development of complementary products by other firms, and can induce investment into areas where it is needed and will be well used.[319] The value of the information communicated by these

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316 *See* Brit Hume, *The Flaw in Judge's Rejection of Microsoft Settlement*, WASH. POST, Feb. 27, 1995, at F20.

317 *See infra* notes 330–31 and accompanying text.

318 The common law did require bad intent for a false advertising claim. *See* W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS § 105, at 728 (5th ed. 1984). The Lanham Act punishes false representations even in the absence of an intent to deceive or knowledge of the falsity. *See* Johnson & Johnson v. Carter-Wallace, Inc., 631 F.2d 186, 189 (2d Cir. 1980); Beneficial Corp. v. FTC, 542 F.2d 611, 617 (3d Cir. 1976); FTC v. Pharmtech Research, Inc., 576 F. Supp. 294, 301 (D.D.C. 1983).

319 *See supra* notes 30–42 and accompanying text.

preannouncements is obvious, especially to Bill Gates, who has argued: "Microsoft's dissemination of information is entirely procompetitive: it enables customers to make better-informed purchases and developers to make better products."[320] Therefore, innocent vaporware announcements are supported by a legitimate business justification, and such a justification allows a defendant accused of attempted monopolization to avoid liability.[321]

Second, an innocent announcement has profit-maximizing potential beyond mere injury to competition. That is not to say that a well-intentioned but ultimately unfulfilled vaporware announcement might not be aimed at specific competitors, but it is also intended to create profit for the announcer by conveying accurate and useful information to consumers, suppliers, and others to pave the way for the announcer's planned product. Fraudulently inaccurate vaporware announcements, on the other hand, cannot create profits for the announcer except by unfairly injuring competition.

Third, to apply a strict liability standard (or even a negligence standard) to vaporware announcements runs too great a risk of stifling legitimate commercial speech to be justified.[322] If courts mandated that firms be strictly liable for their product preannouncements, vaporware marketing (fraudulent and innocent) would be largely eliminated, but so would an important source of valuable consumer information.[323]

These distinctions are obviously difficult to draw. When IBM preannounces by several months its disk-array drive system for storing data on mainframe computers, causing a drop in the share price of the

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[320] Bill Gates, *It's Feast, Not Famine, at the Software Table*, N.Y. TIMES, Mar. 26, 1995, at F13.

[321] *See* Multistate Legal Studies v. Harcourt Brace Publ'g, 63 F.3d 1540, 1550 (10th Cir. 1995), *cert. denied*, 116 S. Ct. 702 (1996).

[322] *See* AREEDA & TURNER, *supra* note 7, ¶ 738i, at 284.

> [N]o liability should attach to statements that truly reflect the monopolist's expectations about future quality or availability where that expectation is both actually held in good faith and objectively reasonable. Such reasonable good faith statements about research, development, and forthcoming production serve the social interest in maximizing the relevant information available to buyers.

Id.

[323] Additionally, to punish companies for not meeting their promised released dates would, in turn, punish consumers, for companies might simply ship the software no matter how "buggy" it was. *See* Hawkins, *High-Tech Mirages*, *supra* note 42, at C1 (quoting David Coursey, editor of *P.C. Letter*).

comparatively small ($1 billion per year) leader in the industry, is the injury to competition outweighed by the value of the information to the consumers who have more time to choose among systems that cost $400,000 or more each?[324] If IBM's announcement is fraudulent and IBM has no good faith reason to believe that it can actually deliver the described product when promised, the answer is clearly "no."

However, if IBM's announcement is a good faith and reasonably based description of IBM's marketing plans, the contrary result appears more reasonable. Consumers benefit by being able to choose between the small competitor's product which is available today and IBM's product which will likely be available at a preannounced future date. The consumer can now make an informed decision weighing the benefits of early delivery of the small competitor's product against the features of IBM's future product.

Obviously, if the consumer has an immediate need, it will buy the small competitor's product. If immediacy is not a problem and the consumer has had prior favorable experiences with IBM products and believes that IBM is a stable company that will be around to provide good service for years to come, the consumer may well wait and choose the IBM product. Consumers are the best judges of how to maximize their net surplus if they are given accurate information.[325]

If IBM delivers the promised product at the promised time, it is difficult for the small competitor to complain about the fairness or legality of the accurate preannouncement. [326] This state of affairs is simply fair

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[324] *See* Lohr, *Product Prognostication*, *supra* note 158, at F9 (describing IBM's marketing approach to its disk-array system).

[325] *See* Lopatka & Page, *Microsoft*, *supra* note 7, at 356–57.

[326] Nonetheless, it has been plausibly argued that even *accurate* product preannouncements can constitute a section 2 violation. Farrell and Saloner argue that if an installed base exists, as it is almost certain to in most segments of the computer industry, then any transition to a new standard must be gradual. In such a milieu, the burdens of making such a transition will fall disproportionately upon the early adopters of the new standard. This situation creates reluctance to adopt the new standard, causing "excess inertia." However, if the scale tips away from the installed base, there can also be "excess momentum." Therefore, they conclude that a preannouncement can sometimes prevent a "bandwagon effect" from coming into existence for existing technology, thereby "secur[ing] the success of a new technology that is socially not worth adopting, and that would not have been adopted absent the preannouncement." Farrell & Saloner, *supra* note 260, at 942. They explain:

> With a preannouncement, two effects favor the new technology. First, if some users decide to wait for it, the network benefits when the new technology is introduced (and

competition. The information increases efficiency, and courts are (and

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> adopted by those users) will be larger than otherwise. Second, the installed base on the old technology will be reduced by the number of users who wait. In some cases, the unique equilibrium without a preannouncement is that the new technology is not adopted, while with a preannouncement it is adopted. Of course, the potential users who decide to wait are indeed well-informed "arbiters of the product's quality" and their welfare is increased, but they are not the only ones who matter. Their adoption of the new technology affects both the users in the installed base and later adopters who might have preferred the old technology to the new. Thus, the preannouncement may reduce welfare.

Id. at 942–43.

However, Landis and Rolfe argue that courts should make short shrift of any antitrust claim based upon an accurate preannouncement:

> [T]he welfare of consumers can be increased only by having additional correct information that is relevant to their purchasing decisions. If competitors lose sales because consumers prefer to postpone their purchases until the new (and presumably more desirable) product becomes available, those lost sales are the result of competition and the appropriate response by the competitor is to offer better products or lower prices to induce consumers to buy from him. The practice creates no entry barriers because it imposes no differential costs on would-be entrants.

Landis & Rolfe, *supra* note 7, at 140.

Lopatka and Page agree, concluding that "[g]iven that information typically increases efficiency, the only sensible rule is that predisclosure of accurate product information is lawful per se." Lopatka & Page, *Microsoft*, *supra* note 7, at 357.

Because an accurate product preannouncement is not technically an incident of vaporware marketing, this issue lies beyond the scope of this Article. Nonetheless, Landis & Rolfe and Lopatka & Page seem to have the stronger position. It is bolstered by the Supreme Court's decision in *Professional Real Estate Investors, Inc. v. Columbia Pictures Indus., Inc.*, 508 U.S. 49 (1993), in which the court held that meritorious litigation, even if filed with anticompetitive intent, is not "sham litigation" and cannot provide the conduct element for a section 2 violation. *See id.* at 60–61. Many lower courts had held that meritorious litigation could still fit within the "sham" exception to the *Noerr-Pennington* doctrine. *See, e.g.*, Mach-Tronics Inc. v. Zirpoli, 316 F.2d 820, 830–31 (9th Cir. 1963); Kobe, Inc. v. Dempsey Pump Co., 198 F.2d 416, 416 (10th Cir. 1952).

Lower courts seem to agree that *accurate* advertising cannot constitute illicit conduct for section 2 Sherman Act purposes. *See, e.g.*, National Ass'n of Pharm. Mfrs. v. Ayerst Lab., 850 F.2d 904, 916 (2d Cir. 1988); Berkey Photo, Inc. v. Eastman Kodak Co., 603 F.2d 263, 287–88 (2d Cir. 1979); General Communications Eng'g Inc. v. Motorola Communications & Elecs., Inc., 421 F. Supp. 274, 290 (N.D. Cal. 1976) (holding that giving truthful information about a competitor's shortcomings should not create section 2 liability).

should be) reluctant to impose antitrust liability upon actions that improve market efficiency.[327]

A closer case is presented if it turns out that IBM's good faith announcement was overly optimistic because of unforeseen difficulties encountered in producing the product. However, most consumers know that development of high-tech products is difficult business and that products are sometimes delivered late. It is not unreasonable to put the burden on the consumer to incorporate that fact into the purchase decision. (However, it remains unreasonable and inefficient to also make the consumer account for the fact that the product preannouncement is a fraudulent lie with no reasonable basis underlying it.)

A final reason to protect innocent vaporware marketing lies in the fact that a company such as Microsoft that does not predisclose, at least on a "need-to-know" basis, will also suffer complaints.[328] To the extent that these complaints are made, companies are put in a Catch-22 situation[329] regarding vaporware announcements. Consider, for example, Microsoft's Windows 95. Not only is nonfraudulent preannounced information about the system helpful to consumers and vendors, it is critical to companies who would supply complementary products, such as applications software. It is unfair to require Microsoft to preannounce its products and then to punish Microsoft if its promises do not pan out. It is not unfair, on the other hand, to require Microsoft to preannounce its products with the only limitation being that it not blatantly lie.

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[327] *See* Lopatka & Page, *Microsoft*, *supra* note 7, at 357–58.

[328] Indeed, some have even claimed that failure to disclose can itself be an antitrust violation. However, the most influential cases in the area refuse to impose an antitrust duty to predisclose upon an innovative competitor. *See* California Computer Prod., Inc. v. IBM Corp., 613 F.2d 727, 744 (9th Cir. 1979) (holding that IBM's failure to disclose information about its new products prior to their introduction did not unnecessarily exclude or restrict competition); *Berkey Photo*, 603 F.2d at 281 (refusing to impose upon Kodak a duty to predisclose innovations).

However, IBM did accept a predisclosure requirement as part of a settlement in an antitrust case brought by the European Commission. *See* Eleanor M. Fox, *Monopolization and Dominance in the United States and the European Community: Efficiency, Opportunity, and Fairness*, 61 NOTRE DAME L. REV. 981, 1014 (1986).

[329] Lopatka and Page term this Catch-22 situation as placing Microsoft in "an inescapable damned-if-you-do-damned-if-you-don't" situation. Lopatka & Page, *Microsoft*, *supra* note 7, at 361.

B. *The Role of Intent*

Many argue that intent should be irrelevant in antitrust law,[330] so the notion of protecting well-intentioned vaporware announcements from antitrust liability while punishing fraudulent announcements may be controversial. But the Supreme Court has established that intent to monopolize or to attain a monopoly is fundamental to section 2 violations.[331] And some forms of conduct already exist which may constitute section 2 violations if done intentionally, but do not if done innocently or negligently.[332] The proposed dichotomy, therefore, is scarcely unique.

Proving the intent element is never easy, but American law is filled with situations where it must, indeed, be established. Most criminal cases and most intentional tort cases, for example, include the defendant's intent as a key element of the prosecutor's or plaintiff's burden of proof. The

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[330] Although most courts embrace the intent element, it is very controversial and was rejected by Judge Easterbrook. *See* A.A. Poultry Farms, Inc. v. Rose Acre Farms, 881 F.2d 1396, 1401 (7th Cir. 1989). Many commentators believe that the intent element should simply be abolished as impossible to determine or, perhaps, irrelevant. *See, e.g.*, Demsetz, *supra* note 235, at 54–55; Barry E. Hawk, *Attempts to Monopolize—Specific Intent as Antitrust's Ghost in the Machine*, 58 CORNELL L. REV. 1121, 1124 (1973); Matthew E. Johnson, Comment, *Meritorious Litigation As a Section 2 Violation*—In Re Burlington Northern, Inc. *Broadens* Noerr-Pennington*'s Sham Exception*, 74 IOWA L. REV. 271, 281 (1988) (addressing specific context of predatory sham litigation).

[331] The Supreme Court has clearly given intent an important role in section 2 jurisprudence. *See infra* note 337 and accompanying text. Many commentators also believe that the intent element should retain an important role in section 2 litigation. *See, e.g.*, Comanor & Frech, *supra* note 139, at 294.

[332] For example, patent fraud can constitute monopolizing conduct, *see* Walker, Inc. v. Food Mach., 382 U.S. 172, 176–77 (1965), but there is no section 2 violation if the defendant was merely negligent, *see* Korody-Colyer Corp. v. General Motors Corp., 828 F.2d 1572, 1578 (Fed. Cir. 1987).

Similarly, sham litigation or petitioning can fulfill the conduct element of section 2 violations, and the Supreme Court recently established a two-part test for determining when predatory sham litigation is occurring. One part of that test was a subjective motive element; the other was an objective meritlessness requirement. *See* Professional Real Estate Investors, Inc. v. Columbia Pictures Indus., Inc., 508 U.S. 49, 60–61 (1993). *See generally* Scott D. Helsel, Note, *Preventing Predatory Abuses in Litigation Between Business Competitors: Focusing on a Litigant's Reasons for Initiating the Litigation to Ensure a Balance Between the Constitutional Right to Petition and the Sherman Act's Guarantee of Fair Competition in Business*, 36 WM. & MARY L. REV. 1135, 1163 (1995) (arguing that even meritorious litigation, if actuated by predatory intent to punish rivals through the process of litigation, should be actionable).

need to determine intent, despite the attendant practical difficulties, is, as just noted, well established in the specific area of antitrust law.[333] Finders of fact often deal with intent and motivation,[334] and the area is one "of jury expertise."[335]

As Justice Holmes wrote many years ago, the presence or absence of intent in antitrust cases "may help the court to interpret facts and to predict consequences."[336] The intent element assists courts in determining the consequences of ambiguous conduct—conduct that is neither clearly competitive (putting out a better product at a lower price) nor clearly anticompetitive (blowing up a competitor's plant, to use Hovenkamp's example). Every competitor hopes to prevail in the market, but the attempt-to-monopolize offense requires a specific intent to prevail by "means that are in some sense untoward."[337]

In the high-tech setting, evidence that a vaporware announcement was made fraudulently rather than innocently sends a strong signal that the means used were "untoward." It signals that the information contained in

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[333] *See* Brooke Group Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 225 (1993) (making the parties' "respective incentives and will" a key element of predatory pricing analysis); Grip-Pak, Inc. v. Illinois Tool Works, Inc., 694 F.2d 466, 472 (7th Cir. 1982) ("[W]e are not prepared to rule that the difficulty of distinguishing lawful from unlawful purpose in litigation between competitors is so acute that such litigation can never be considered an actionable restraint of trade . . . .").

In fairness, it should be noted that the trend over the past 20 years or so in Supreme Court vertical and horizontal restraint analysis has been to focus more on economic effects and less on intent. *See generally* FTC v. Indiana Fed. of Dentists, 476 U.S. 447 (1986); Northwest Wholesale Stationers v. Pacific Stationery & Printing Co., 472 U.S. 284 (1985); NCAA v. Board of Regents, 468 U.S. 85 (1984). However, it is also fair to note that the Supreme Court's recent decision in *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451 (1992) may indicate that "the tide [toward use of economic theories] is ebbing and that courts are interested in reconsidering the legal significance of what economic theory has to offer" antitrust law. Wise, *supra* note 148, at 715.

[334] Thomas A. Piraino, Jr., *Distributor Terminations Pursuant to Conspiracies Among a Supplier and Complaining Distributors: A Suggested Antitrust Analysis*, 67 CORNELL L. REV. 297, 314 n.80 (1982).

[335] Harry S. Gerla, *Discounters and the Antitrust Laws: Faces Sometimes Should Make Cases*, 12 J. CORP. L. 1, 15 (1986).

[336] Chicago Bd. of Trade v. United States, 246 U.S. 231, 238 (1918).

[337] Cooper, *supra* note 18, at 395 (citing numerous cases). Every driver in the Indianapolis 500 race wants to win, but only one will. So, the intent to prevail over competitors is insufficient to indicate an attempt to monopolize. *See* Mount Lebanon Motors, Inc. v. Chrysler Corp., 283 F. Supp. 453, 461–62 (W.D. Pa. 1968), *aff'd*, 417 F.2d 622 (3d Cir. 1969). However, an intent to prevail in the race by putting sugar in the fuel tanks of competitors might well be sufficient to indicate an attempt to monopolize.

the announcement is more likely to injure consumers than to inform them, more likely to deform the market than to improve its efficiency. The consequences of an intentionally misleading vaporware statement will typically be destructive to the process of fair competition. A good faith vaporware statement, on the other hand, carries at least a reasonable promise of enlightening consumers, alerting retailers and suppliers, and enhancing efficiency in numerous ways. The lower courts seem to agree that good faith vaporware announcements should be protected by concerns for efficiency and First Amendment commercial speech rights.[338]

C. *Distinguishing Fraudulent Vaporware Marketing from Innocent Vaporware Marketing*

If innocent vaporware marketing should be protected from antitrust scrutiny, yet fraudulent vaporware advertising should be condemned, the difficult question arises of how to fashion a rule that distinguishes between the two in order to avoid the dreaded "false positives"—finding antitrust violations where only efficient, fair competitive conduct occurred.[339] The rule should avoid unduly discouraging innovation, inhibiting the efficient flow of useful commercial information, and stifling legitimate competition.[340]

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[338] *See, e.g.*, MCI Communications v. AT&T, 708 F.2d 1081, 1128 (7th Cir. 1983) (accepting Areeda and Turner's view that while knowingly false vaporware statements can generate antitrust liability, good faith expressions of future plans cannot); Berkey Photo, Inc. v. Eastman Kodak Co., 603 F.2d 263, 287–88 (2d Cir. 1979) (holding that absent actual deception, advertising of new product is not anticompetitive); ILC Peripherals Leasing Corp. v. IBM Corp., 458 F. Supp. 423, 442 (N.D. Cal. 1978), *aff'd per curiam sub nom.* Memorex Corp. v. IBM Corp., 636 F.2d 1188 (9th Cir. 1980) (holding product preannouncement inactionable absent knowing falsehood); Ronson Patents Corp. v. Sparklets Devices, 112 F. Supp. 676, 676 (E.D. Mo. 1953) (finding no antitrust liability even though consumer response to apparently good faith product preannouncement caused announcer to decide not to market the product); *cf.* Solargen Elec. Motor Car Corp. v. American Motors Corp., 530 F. Supp. 22, 26 & n.3 (S.D.N.Y. 1981), *aff'd*, 697 F.2d 297 (2d Cir. 1982) (apparently holding that allegation of even a "knowing" exaggeration of product potential did not support antitrust claim).

[339] Even BeVier, one of the leading proponents of limiting regulation of false advertising, would still punish fraudulent false advertising, implying that she believes it possible and necessary to distinguish between inadvertent misstatements and those that are intentionally made. *See* BeVier, *supra* note 218, at 2–3 & n.10.

[340] *See* Dennis, *supra* note 200, at 592–93 ("The sensitive legal problem is to structure a legal rule that catches truly anticompetitive conduct without creating disincentives to innovate.").

In Ordover and Willig's controversial article about predatory pricing and their new theory of predatory product innovation,[341] they also discussed vaporware marketing. Although they recognized that companies can use fraudulent vaporware marketing as an effective anticompetitive tool, they concluded that because there are also legitimate reasons for product preannouncements, "any timing of a product preannouncement should be presumed legal . . . [because] it [is] impossible to fashion an implementable test for anticompetitive product preannouncements."[342] This conclusion was somewhat ironic given that their tests for determining when predatory pricing or predatory product innovation had occurred were so sophisticated and complex as to arguably be beyond the practical abilities of most courts to implement through known litigation processes.[343] Nonetheless, their general point is well taken.

1. *Borrowing a Standard from Securities Law*

Still, a workable rule already exists in securities law and can be applied in these section 2 vaporware cases. A vaporware announcement points to the future and is analogous to financial projections and other forward-looking statements made by public companies to investors. The SEC has promulgated rules pursuant to both the 1933 Securities Act and the 1934 Securities Exchange Act in order to establish safe harbors for such forward-looking statements. For example, Rule 175 of the 1933 Act provides, in part, that a projection "shall not be deemed a fraudulent

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Although he recognizes the difficulty in drawing this distinction, Professor Dennis agrees with the conclusion of this Article that if plaintiffs can prove that false advertising by monopolists or would-be monopolists was intentionally misleading, it should be actionable. However, simple miscalculations should not be actionable because to make them so would unduly discourage innovation. *See id.* at 593–94.

[341] Ordover & Willig, *supra* note 7, at 8; *see also* Robert E. Bartkus, Note, *Innovation Competition: Beyond* Telex v. IBM, 28 STAN. L. REV. 285 (1976) (examining *Telex Corp. v. IBM Corp.*, 367 F. Supp. 258 (N.D. Okla. 1973), *rev'd* 510 F.2d 894 (10th Cir. 1975)).

The theory has been heavily criticized. *See, e.g.*, Campbell, *supra* note 138, at 1167–70; Joseph Gregory Sidak, *Debunking Predatory Innovation*, 83 COLUM. L. REV. 1121 (1983).

[342] Ordover & Willig, *supra* note 7, at 53.

[343] *See* HOVENKAMP, *supra* note 104, § 6.5b1, at 255 ("[N]o comprehensible legal rule can weigh all the relevant variables in a predatory pricing case . . . ."); Hughes, *supra* note 301, at 288 n.62 (arguing that legal tests for predatory pricing have become so complex as to be "nearly always beyond the capacities of the litigation process").

statement . . . unless it is shown that the statement was made or reaffirmed without a reasonable basis or was disclosed other than in good faith."[344]

As applied by the courts in securities law cases, the doctrine has evolved that a projection or other forward-looking statement, such as a vaporware announcement, contains three implicit factual assertions: (a) that the statement is genuinely believed, (b) that there is a reasonable basis for the belief, and (c) that the speaker is not aware of any undisclosed facts tending to seriously undermine the accuracy of the statement.[345]

This standard is perfectly reasonable,[346] and it is suitable for section 2 Sherman Act purposes. As it turns out, the standard already has a substantial track record in securities litigation arising from vaporware marketing. Investors as well as consumers can be fooled by vaporware announcements. When vaporware promises are not realized, investors are often hurt when the stock price of the high-tech company drops. Investors often respond by filing section 10(b),[347] Rule 10b-5[348] class action fraud suits against the announcing company. For example, Apple Computer Co. was hit with a $100 million jury verdict arising out of a vaporware announcement,[349] though the company was fortunate enough to later settle the case out of court for only $16 million.[350] Numerous companies, including Microsoft,[351] have found themselves the target of such lawsuits based on vaporware announcements.[352]

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[344] 17 C.F.R. § 230.175 (1994). Rule 3b-6(a) of the 1934 Securities Exchange Act is comparable. 17 C.F.R. § 240.3b-6(a) (1994).

[345] *See In re* Apple Computer Sec. Litig., 886 F.2d 1109, 1113 (9th Cir. 1989); Marx v. Computer Sciences Corp., 507 F.2d 485, 490 (9th Cir. 1974).

[346] This standard is not quantitative, but need not be viewed as any more subjective or vague than standards that do purport to be so. As Professor Jacobs has recently argued persuasively, economists are to a large extent fooling only themselves in denying the subjectivity of their analysis. *See* Michael S. Jacobs, *An Essay on the Normative Foundations of Antitrust Economics*, 74 N.C. L. REV. 219, 265 (1995) [hereinafter Jacobs, *Essay*]. Even the most well-established "scientific" test in antitrust law—the Areeda-Turner cost-based test for predation—has recently been shown to be inherently ambiguous and likely inferior to an intent-based approach such as the one suggested here. *See* Timothy P. Ross, *Predation, Cost-Based Tests and Predatory Intent*, 5 J. LEGAL ECON. 35, 42 (1995).

[347] 15 U.S.C. § 78j(b) (1988).

[348] 17 C.F.R. § 240.10b-5 (1994).

[349] *See* Ken Siegman, *Apple Verdict Stuns Lawyers*, S.F. CHRON., June 1, 1991, at B1.

[350] *See* Victoria Slind-Flor, *Spoils of Apple*, NAT'L L.J., Apr. 13, 1992, at 2.

[351] Microsoft was sued in 1989 after its stock price fell more than 13% following an announcement of one of the delays in its word-processing software. A little more than a year later, Microsoft settled the suit for a relatively meager $1.5 million. *See* Paul Andrews,

Because section 10(b) is an intent-based statute,[353] courts in the securities law cases have long been drawing exactly the same distinction proposed here. Fraudulent vaporware marketing can be the basis for 1934 Act securities fraud liability; innocent vaporware marketing cannot.

2. *Applying the Standard*

So, in order to establish actionable fraudulent vaporware marketing (and to distinguish the challenged action from innocent and protected vaporware marketing), plaintiffs in section 2 cases should have the burden of proof to establish what must be proven in securities fraud suits, namely that the defendant (a) did not really believe the announcement when it was made, (b) had no reasonable basis to believe the announcement when it was made,[354] or (c) was aware at the time the announcement was made of

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Microsoft Slowdown—Financial Chief Downplays Prospects, SEATTLE TIMES, July 19, 1992, at C1.

[352] *See, e.g.*, Vosgerichian v. Commodore Int'l, 832 F. Supp. 909, 909 (E.D. Pa. 1993) (reporting investors' suit filed after defendant's stock price fell when a marketed product did not perform as vaporware announcements had promised); Bharucha v. Reuters Holdings PLC, 810 F. Supp. 37, 37 (E.D.N.Y. 1993) (reporting investors' suit filed when touted product's release date was delayed six months); *In re* Storage Tech. Corp. Sec. Litig., 804 F. Supp. 1368, 1368 (D. Colo. 1992) (reporting investors' suit filed when vaporware announcements concealed production problems); Berliner v. Lotus Dev. Corp., 783 F. Supp. 708, 709 (D. Mass. 1992) (reporting investors' suit claiming that defendant's software was not released as scheduled); Alfus v. Pyramid Tech. Corp., 764 F. Supp. 598, 600 (N.D. Cal. 1991) (reporting investors' suit alleging that defendant fed unduly optimistic reports about its new MIServer product line to financial analysts); Massaro v. Vernitron Corp., 559 F. Supp. 1068, 1070–71 (D. Mass. 1983) (reporting investors' suit filed when company could not live up to its promise of quickly delivering new product). *See generally* Prentice & Langmore, *supra* note 24; Elliott J. Weiss & John S. Beckerman, *Let the Money Do the Monitoring: How Institutional Investors Can Reduce Agency Costs in Securities Class Actions*, 104 YALE L.J. 2053, 2082 (1995).

Although there are several such cases on the books, a recent study indicates that vaporware claims make up only about 6% of reported section 10(b), Rule 10b-5 settlements. *See* Willard T. Carleton et al., *Securities Class-Action Lawsuits: A Descriptive Study*, CSFLA Working Paper #96-016, Vol. 7, May 9, 1996.

[353] *See* Ernst & Ernst v. Hochfelder, 425 U.S. 185, 193 (1976) (holding that "scienter," defined as a mental state embracing "intent to deceive, manipulate or defraud," is a necessary element of a 10b-5 cause of action). For a discussion of court applications of the scienter requirement in 10b-5 vaporware cases, see Prentice & Langmore, *supra* note 24, at 40–46.

[354] The reasonable basis standard also exists already in the context of false advertising. Because vaporware marketing is a form of false advertising, the analogy is easily made.

specific facts that contradicted the announcement. This rule places a heavy, yet fair burden upon plaintiffs.[355]

Such intent can be objectively inferred from anticompetitive conduct[356] or discovered in more subjective form in the memos and statements of company officials.[357]

3. *Avoiding "False Positives"*

Other theories of predatory activity, such as Ordover and Willig's theory of predatory innovation,[358] have been criticized as potentially chilling innovation.[359] Fortunately, allowing antitrust actions based on

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FTC advertising regulations require that advertisers have a "reasonable basis" for their claims prior to making them. *See In re* Pfizer, Inc., 81 F.T.C. 23, 64 (1972). The standard is an objective one, applied on a case-by-case basis. *See id.*

[355] Yet another factor raising the burden of proof for plaintiffs is the requirement of causation. Defendants in vaporware antitrust cases might well make effective use of a defense analogous to the "truth-on-the-market" defense in securities fraud law.

In a truth-on-the-market case, a corporate defendant guilty of a fraudulent statement argues, essentially: "Yeah, we lied, but no one believed us." The defendant can establish this defense by pointing to well-circulated press accounts contradicting the company's claims and to a market price which did not react to the company's announcement. This defense has been used successfully in securities fraud cases based on vaporware announcements. *See, e.g.*, Wielgos v. Commonwealth Edison Co., 892 F.2d 509, 512–16 (7th Cir. 1989); *In re* Apple Computer Sec. Litig., 886 F.2d 1109, 1116 (9th Cir. 1989). *See generally* Prentice & Langmore, *supra* note 24, at 50–52.

There is already evidence that the public is growing increasingly distrustful of product preannouncements, so it is conceivable that an antitrust defendant might be able to realistically claim: "Yes, we lied about our product in order to injure our competitors, but the consumers simply did not believe us."

[356] *See* Spectrum Sports, Inc. v. McQuillan, 506 U.S. 447, 458–59 (1993); Multiflex, Inc. v. Samuel Moore & Co., 709 F.2d 980, 992 (5th Cir. 1983). For example, other anticompetitive tactics simultaneously aimed at the same competitor targeted by a vaporware announcement provide circumstantial evidence of intent.

[357] As noted earlier, *supra* note 129, "locker room" statements and other rhetorical flourishes of company officials must not be given undue weight. Nonetheless, statements of an intent to put competitors out of business can provide evidence of specific intent to obtain a monopoly. *See, e.g.*, Instructional Sys. Dev. Corp. v. Aetna Cas. & Sur. Co., 817 F.2d 639, 647 (10th Cir. 1987); *see also* James F. Rill, *Future Antitrust Division Enforcement of Section 2*, 59 ANTITRUST L.J. 535, 539 (1991) (stating that while "generalized statements of zeal" should not be accorded much weight, "explanations of the actual purpose of disputed conduct must be taken very seriously").

[358] *See* Ordover & Willig, *supra* note 7, at 8.

[359] *See, e.g.*, Burns, *Paradox*, *supra* note 216, at 69–70 (citing numerous sources).

fraudulent vaporware poses minimal danger to innovative activity,[360] because nothing in the theory prevents or discourages companies from investing in plants, equipment, research and development, and the like. A more vigorous application of antitrust law in this area is likely to stimulate, rather than inhibit, innovative activity. Domination of high-tech markets by a few firms using unfair tactics, even as mundane as false advertising, is likely to stifle innovation[361] that seems to spring more from small firms in highly competitive markets than from large firms with dominating market shares.[362] By blocking the abuse of monopoly power to advance the profit seeker's purposes, antitrust law can direct that monopolist's energies into more productive and innovative channels.[363]

It might be argued, however, that rendering fraudulent vaporware announcements actionable, while not discouraging innovation, might unduly chill the dissemination of useful commercial information. This concern is less serious, but still worthy of attention because of the omnipresent worry of economists that an antitrust cause of action may lead to too many "false positives" to justify imposing liability upon even a clearly fraudulent anticompetitive practice. The "false positives" problem need not be too worrisome here, for several reasons.

First, as noted, plaintiffs in these cases must carry a hefty burden of proof.[364] In order to prevail in such a case, the plaintiff must carry the

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[360] Indeed, virtually none of the strong criticisms lodged by Sidak against Ordover and Willig's predatory innovation theory has any application to a predatory vaporware marketing theory. *See generally* Sidak, *supra* note 341.

[361] Firms which gain market domination through innovation have a tendency to abuse that power, stifling subsequent innovation. *See* Eleanor M. Fox, *Don't Let Antitrust Become Obsolete*, N.Y. TIMES, Sept. 4, 1995, at 19.

[362] *See* Fox & Sullivan, *supra* note 235, at 72; F.M. Scherer, *Antitrust, Efficiency & Progress*, *in* REVITALIZING ANTITRUST IN ITS SECOND CENTURY, *supra* note 139, at 130, 148 ("[I]t is fairly certain that giant monopolistic enterprises are not superior engines of technological progress. By striving to maintain a diversity of competitors and keeping entry barriers from being raised unnecessarily, antitrust is at least pointing in the right direction.").

[363] *See* William I. Baumol & Janusz A. Ordover, *Antitrust: Source of Dynamic and Static Inefficiencies?*, *in* ANTITRUST, INNOVATION, AND COMPETITIVENESS, *supra* note 13, at 83, 90 (also stressing that competitors can damage competition by unfounded use of antitrust litigation).

[364] *See* Gerla, *Federal Antitrust*, *supra* note 171, at 1087 (suggesting that use of antitrust law to curb false advertising as a competitive gambit need not discourage dissemination of truthful information because a section 2 plaintiff has such a high burden of proof); Lande, *Beyond Chicago*, *supra* note 172, at 18 (noting how rise of rule of reason since 1977 has increased antitrust plaintiffs' burdens and reduced the number of cases filed);

burden of proof to establish, at a minimum, (a) that defendant possessed monopoly power; (b) that defendant had the requisite intent (general for monopolization offense, specific for attempt to monopolize); (c) that defendant's acts caused plaintiff's loss; (d) that there are entry and reentry barriers; and (e) that defendant made false vaporware statements without (i) good faith or (ii) reasonable basis that were aimed at one or more specific competitors.

Because doctrine is being borrowed from securities law, section 2 vaporware plaintiffs will probably face development of a defense arising in analogous securities law cases called the "bespeaks caution doctrine," which recognizes that no company can deliver on all its promises so there should not be securities liability based on "fraud by hindsight."[365] The doctrine protects properly *qualified predictions* from liability based simply on the fact that they did not ultimately occur as projected.[366] It does so, importantly, at the motion to dismiss or summary judgment stage.[367] A review of recent cases shows that the securities law safe harbors and the bespeaks caution doctrine combine to provide defendants with very substantial protection from frivolous claims.[368] Congress was sufficiently

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Ordover & Willig, *supra* note 7, at 50–51 (also arguing that danger of excessive antitrust litigation by competitors is limited by high burden of proof on plaintiffs).

Others have also strongly argued that allowing competitors to sue for false advertising, presumably such as vaporware marketing, under section 43(a) of the Lanham Act will not have ill effects. *See, e.g.*, Gerla, *Federal Antitrust*, *supra* note 171, at 1087; Goldman, *supra* note 201, at 508–14 (allowing such suits will not unduly chill truthful speech, raise enforcement costs, or encourage RRC suits). The problem should be even further diminished in the antitrust context because a Sherman Act plaintiff has so much more to prove (especially intent and knowledge of falsity) than does a Lanham Act plaintiff. *See* Burns, *Paradox*, *supra* note 216, at 82 & n.144.

[365] *See* DiLeo v. Ernst & Young, 901 F.2d 624, 628 (7th Cir. 1990) ("There is no 'fraud by hindsight.'").

[366] *See* Sinay v. Lamson & Sessions Co., 948 F.2d 1037, 1040 (6th Cir. 1991); Isquith v. Middle South Utils., Inc., 847 F.2d 186, 203–04 (5th Cir. 1988).

[367] *See* Dennis J. Block & Jonathan M. Hoff, *Court Defines Scope of Bespeaks Caution Doctrine*, N.Y. L.J., Nov. 18, 1993, at 5 ("The [bespeaks caution] doctrine is particularly significant in that it has been used to terminate securities fraud litigation before it is permitted to go to a jury on motions to dismiss or for summary judgment."); Christian S. Herzeca, *How Much Disclosure is Enough? Evolving Law Raises Questions*, N.Y. L.J., Dec. 6, 1993, at 13 (noting that defendants can use the bespeaks caution doctrine "aggressively to support an early motion to dismiss if the prospectus at issue contains any significant level of risk disclosure").

[368] Any reasonable reading of recent cases demonstrates that the Rule 175 and 3b–6 safe harbors, coupled with the bespeaks caution doctrine, have been the basis for nearly innumerable dismissals and summary judgments in securities fraud cases. *See, e.g.*,

pleased with the doctrine to codify it in the Private Securities Litigation Reform Act of 1995.[369]

A plaintiff who overcomes the bespeaks caution doctrine and proves additionally that false vaporware announcements were not believed by the defendant, had no reasonable basis, or were contradicted by facts known to defendant will truly have earned the conclusion that the conduct element of a section 2 monopolization or attempt to monopolize offense has been established.

Second, a few prudent precautions regarding vaporware can further insulate a high-tech company from section 2 liability. Prentice and Langmore have suggested a regime by which high-tech companies can virtually eliminate inaccurate vaporware announcements.[370] The details of

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Saltzberg v. TM Sterling/Austin Assoc., Ltd., 45 F.3d 399, 400 (11th Cir. 1995); *In re* Worlds of Wonder Sec. Litig., 35 F.3d 1407, 1416 (9th Cir. 1994); *In re* Donald J. Trump Casino Sec. Litig., 7 F.3d 357, 371–72 (3d Cir. 1993); Krim v. Banctexas Group, Inc., 989 F.2d 1435, 1446–49 (5th Cir. 1993); Moorhead v. Merrill Lynch, 949 F.2d 243, 245 (8th Cir. 1991); Sinay v. Lamson & Sessions Co., 948 F.2d 1037, 1040–42 (6th Cir. 1991); *In re* Convergent Tech. Sec. Litig., 948 F.2d 507, 515 (9th Cir. 1991); I. Meyer Pincus & Assoc. v. Oppenheimer & Co., 936 F.2d 759, 763 (2d Cir. 1991); Romani v. Shearson Lehman Hutton, 929 F.2d 875, 879 (1st Cir. 1991); Luce v. Edelstein, 802 F.2d 49, 56 (2d Cir. 1986); Bentley v. Legent Corp., 849 F. Supp. 429, 433 (E.D. Va. 1994); Cione v. Gorr, 843 F. Supp. 1199, 1203–05 (N.D. Ohio 1994); Renz v. Schreiber, 832 F. Supp. 766, 779–83 (D.N.J. 1993); Barrios v. Paco Pharm. Serv., Inc., 816 F. Supp. 243, 250 (S.D.N.Y. 1993); *In re* Integrated Resources Real Estate Sec. Litig., 815 F. Supp. 620, 672 (S.D.N.Y. 1993); Ferber v. Travelers Corp., 802 F. Supp. 698, 711 (D. Conn. 1992); Porter v. Shearson Lehman Bros., Inc., 802 F. Supp. 41, 57 (S.D. Tex. 1992); Adler v. Berg Harmon Assoc., 790 F. Supp. 1222, 1230 (S.D.N.Y. 1992); Harner v. Prudential Sec. Inc., 785 F. Supp. 626, 641 (E.D. Mich. 1992); Haggerty v. Comstock Gold Co., 765 F. Supp. 111, 115 (S.D.N.Y. 1991); Hayden v. Feldman, 753 F. Supp. 116, 120 (S.D.N.Y. 1990); Friedman v. Arizona World Nurseries Ltd., 730 F. Supp. 521, 539–40 (S.D.N.Y. 1990); Ruff v. Genesis Holding Corp., 728 F. Supp. 225, 228–29 (S.D.N.Y. 1990); *In re* National Smelting, Inc., 722 F. Supp. 152, 171 (D.N.J. 1989); O'Brien v. National Property Analysts Partners, 719 F. Supp. 222, 227 (S.D.N.Y. 1989); Alizac Partners v. Rospatch Corp., 712 F. Supp. 599, 608–09 (W.D. Mich. 1989); Nichols v. Merrill Lynch, Pierce, Fenner & Smith, 706 F. Supp. 1309, 1327 (M.D. Tenn. 1989); Schwartz v. Novo Indus. A/S, 658 F. Supp. 795, 798 (S.D.N.Y. 1987).

[369] Pub. L. No. 104-67, 109 Stat. 737 (1995).

[370] Prentice and Langmore suggest, among other things, that firms (a) inform their employees of the potential legal liability that can arise from inaccurate vaporware statements; (b) create Disclosure Compliance Committees to identify important information and coordinate public disclosures; and (c) take steps to reduce the gap between vaporware announcements and results by eliminating unnecessary publication of projections, avoiding

that regime need not be repeated here, but if widely implemented, such a program would drastically reduce the amount of vaporware marketing and dramatically improve the accuracy and reliability of high-tech marketing communications, to the great benefit of consumers and the industry alike.

Third, even without adopting the system suggested by Prentice and Langmore, companies could easily avoid antitrust liability by following the suggestion of Stewart Alsop, editor of *InfoWorld*, and eliminate (or at least selectively reduce) the making of public vaporware announcements. They could make disclosures only to key customers or rival software designers privately under stringent nondisclosure contracts.[371] In this way, the greatest benefits of product preannouncements could be preserved without misleading the market as a whole.

Other companies, for whose products advance notice is unnecessary, could in an abundance of caution follow the recommendations of the Software Business Practices Committee that they not publicly preannounce products until (a) planning, designing, coding, and preliminary testing have occurred; (b) beta testing has begun; and (c) the products will be available within a "normal" period of time.[372]

Some companies, including Lotus and IBM, have at times in the past even adopted "no preannouncement" policies without disastrous consequences.[373]

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unfounded optimism in making forecasts, and being alert to internal facts that contradict the company's public pronouncements. *See* Prentice & Langmore, *supra* note 24, at 62–73.

371 *See* Flynn, *supra* note 33, at D4.

372 *See* Jeffrey P. Papows, *A Call for Ethics: The Computer Industry Must Agree On and Enforce Stringent Standards for Business Practices*, COMPUTER GRAPHICS WORLD, Mar. 1991, at 116.

373 *See* Ed Bride & Mike Bucken, *Lotus Celebrates, Contemplates: Firm Promises to Stop Hyping Vaporware*, SOFTWARE MAGAZINE, July 1988, at 21. Lotus Development Corporation adopted a no-vaporware policy after several months of negative publicity for not living up to product preannouncements. *See id.*

IBM's Buck Rodgers described in detail that company's post-antitrust policy regarding vaporware:

> It is IBM practice not to disclose, discuss or sell IBM products before their announcement. For IBM to reveal anything about unannounced products—whether equipment, programs, or services—to a prospect or customer could be viewed by a competitor as unfair. In addition, pre-announcement disclosure could reach other customers and impact sales of IBM's existing product line, or jeopardize IBM copyright or patent positions. Besides, it is always possible for technical difficulties during product development to result in cancellation or postponement of the new product.

Given the extremely high burden of proof upon plaintiffs and the protective steps that potential defendant companies could take to insulate themselves from liability, the chance of too many false positives occurring and unduly discouraging innovation and competition seems very slight.[374] Realistically, the potential for too many false positives becomes even less likely in light of the fact that current antitrust theory is shaped largely by Chicago School economists, and the federal bench is currently occupied largely by judges who are conservative on antitrust issues.[375]

Commercial speech is a hardy breed[376] and is unlikely to be unduly chilled by recognizing a cause of action for fraudulent vaporware marketing. What is likely is that companies will be more cautious and more truthful about their product preannouncements, producing more reliable and useful information for the marketplace. The total volume of information flowing to the market may decline, but the volume of accurate and useful information will almost surely increase. If the standards of accuracy for product preannouncements are raised, the amount of vaporware should diminish, thereby creating an atmosphere where accurate advertising will receive more credence from consumers than it currently does, improving efficiency.

> Nondisclosure also means that an IBM representative may not attempt to delay a customer decision to order competitive equipment by hinting that a new IBM product is under development. (There are exceptions to the nondisclosure rule, as in the case of national interest, or when a user works with IBM to develop new products, programs, or services. For such cases, there are careful procedures which must be closely followed.)

F.G. "BUCK" RODGERS, THE IBM WAY 225 (1986).

[374] A related concern deals with the time and expense of litigating antitrust cases. Professor Shepherd points out, however, that "well-managed section 2 treatments can be much swifter than has been supposed." Shepherd, *Economic Analysis*, *supra* note 232, at 933 (1990).

[375] *See, e.g.*, Stephen Calkins, *Summary Judgment, Motions to Dismiss and Other Examples of Equilibrating Tendencies in the Antitrust System*, 74 GEO. L.J. 1065, 1104–61 (1986) (demonstrating increasingly liberal use by courts of summary techniques for disposing of antitrust suits). *See generally* William E. Kovacic, *Reagan's Judicial Appointees and Antitrust in the 1990s*, 60 FORDHAM L. REV. 49 (1991) (indicating that current federal judges are not receptive to expanding antitrust liability); Steven C. Salop & Lawrence L. White, *Economic Analysis of Private Antitrust Litigation*, 74 GEO. L.J. 1001, 1002–04 (1986) (demonstrating decline in antitrust litigation).

[376] *See* Central Hudson Gas. & Elec. v. Public Serv. Comm'n, 447 U.S. 557, 564 n.6 (1980); Bates v. State Bar, 433 U.S. 350, 381 (1977).

VI. CONCLUSION

Through success and excess, Microsoft may single-handedly revive antitrust law in the United States.[377] Its conduct has, at the very least, raised a fascinating issue regarding the antitrust implications of vaporware marketing strategies.

There is strong evidence that many high-tech companies play the vaporware game in order to "freeze the market" for competitors' goods.[378] When the game is played by Microsoft, or any other firm with market power, it can have the effect of stifling fair competition.[379] When

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[377] In addition to the investigation and consent decree described in Part II, the Department of Justice has launched several other investigations or suits against Microsoft. To sample just four:

- The Department of Justice investigated and ultimately derailed Microsoft's proposed merger with Intuit. *See* G. Christian Hill et al., *Microsoft Drops Bid for Intuit—A Victory for Antitrust Agency*, WALL ST. J., May 22, 1995, at A1. The attempted merger was Microsoft's bid to expand its considerable software applications influence into the personal-finance software market by acquiring Intuit's Quicken (75% market share) to replace its own Microsoft Money (4% market share). *See* Deborah Gage, *Inquiry into Intuit Deal Grows—Justice Department Talks to More Companies*, COMPUTER RESELLER NEWS, Dec. 12, 1994, at 3.
- The government investigated Microsoft's bundling of applications software with Windows 95. *See* Richard Brandt, *Still Messin' with Bill*, BUS. WK., Mar. 13, 1995, at 44. Specifically, the Department of Justice considered whether to force Microsoft to remove software from the Windows 95 package that allows users to tap into the new Microsoft Network on-line service. It appeared for a while that the Department might delay the August 24, 1995 introduction of Windows 95, but that did not occur. Still, the government made it clear that the probe would continue after the Windows 95 release date. *See* Claudia MacLachlan, *Microsoft Investigators Press Ahead*, NAT'L L.J., Aug. 21, 1995, at A1.
- The Justice Department also investigated on antitrust grounds Microsoft's practice of requiring computer makers who license Windows 95 to promise not to bring patent infringement suits against Microsoft or other licensees. *See* Viveca Novak, *U.S. Probes Microsoft Licensing Pacts Prohibiting Windows 95 Patent Suits*, WALL ST. J., June 12, 1995, at B3.
- Finally, the Justice Department reportedly looked into Windows 95's tendency to disrupt rival products' Internet links and to destroy rivals' Net-connecting programs. *See* Jared Sandberg & G. Christian Hill, *Microsoft Probe Spurs Subpoenas Tied to Internet*, WALL ST. J., Dec. 4, 1995, at A3.

[378] *See* Johnston & Betts, *supra* note 60, at 2 (quoting Mitchell Kertzman, CEO of Microsoft competitor Powersoft Corporation).

[379] *See* Elmer-Dewitt, *Tripping*, *supra* note 7, at 31. As noted earlier, conduct which may be perfectly legal in other contexts for other competitors may be illegal when performed by monopolists with the intent of smothering competition. *See* United States v.

fraudulent vaporware marketing enables Microsoft or any other high-tech company to unfairly obtain or retain monopoly power, vaporware marketing transcends false advertising and unfair trade practice concerns and becomes a potential Sherman Act violation.[380]

Fraudulent vaporware marketing not only satisfies traditional tests for predatory behavior under section 2 of the Sherman Act, but also fits comfortably within the mainstream of recent theoretical advances in nonprice predation theory. Fraudulent vaporware marketing is comparable to other recently articulated forms of nonprice predation, such as raising rivals' costs (RRC) and predatory product innovation, that have arguably received Supreme Court approval.[381] However, fraudulent vaporware marketing should be less controversial than these other forms of nonprice predation because, inter alia: (a) there is much more evidence that it is an existing and frequently used anticompetitive tool; (b) it is much less easily justified on moral or business purpose and efficiency grounds; and (c) the potential disadvantages of recognizing it as actionable under section 2 (*e.g.*, false positives and discouraging legitimate competition) are much less likely to occur.[382]

On the other hand, innocent vaporware announcements made in good faith and with reasonable belief, even if issued for strategic purposes, carry too much potential for efficiency benefits to warrant antitrust censure. Fortunately, reasonable means for distinguishing between fraudulent and innocent vaporware announcements are available.

Griffith, 334 U.S. 100, 100 (1948); MCI Communications v. AT&T, 708 F.2d 1081, 1148–49 (7th Cir. 1983).

[380] It is certainly not unusual that an activity which constitutes one type of legal wrong (false advertising or unfair competition) can also constitute an antitrust wrong. *See* 1 J. THOMAS MCCARTHY, TRADEMARKS AND UNFAIR COMPETITION § 1:14, at 32 (2d ed. 1984) ("Overlap between the categories of antitrust and unfair competition should be no more (nor less) confusing than overlaps which exist in every lawsuit between the standard legal pigeonholes such as torts, contracts, and property.").

[381] *See* Jacobs, *Essay*, *supra* note 346, at 264 (concluding that the Supreme Court implicitly accepted several key assumptions of the post-Chicago view in *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451 (1992)); Lande, *Chin*, *supra* note 315, at 197 (agreeing that *Kodak* seems to accept many post-Chicago assumptions advanced in this Article, including that consumers can be exploited by imperfect information).

[382] The issues raised in this Article are not of mere academic interest. Not long before this issue went to press, Microsoft was sued by Caldera, Inc. for, among other alleged antitrust violations, its vaporware statements that arguably led to the decline of DR-DOS. *See* Lisa Carricaburu, *Software David Slings Lawsuit at Goliath Microsoft*, SALT LAKE CITY TRIB., July 25, 1996, at D1.